WEST CHESTER STATE COLLEGE BULLETIN

WEST CHESTER, PENNSYLVANIA

GRADUATE STUDIES

CATALOGUE NUMBER

1966-1967 SESSIONS

WEST CHESTER STATE COLLEGE

IS ACCREDITED BY

THE MIDDLE STATES ASSOCIATION OF COLLEGES

AND SECONDARY SCHOOLS,

THE NATIONAL COUNCIL FOR ACCREDITATION

OF TEACHER EDUCATION,

THE AMERICAN ASSOCIATION FOR HEALTH,

PHYSICAL EDUCATION, AND RECREATION,

AND THE

NATIONAL ASSOCIATION OF SCHOOLS OF MUSIC.

THE COLLEGE IS AUTHORIZED BY THE

STATE BOARD OF EDUCATION TO OFFER GRADUATE

PROGRAMS AND TO AWARD THE MASTER'S DEGREE.

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Bulletin

Graduate Studies

Leading to the

Master of Education Degree

*Audio-Visual Education
Biology
*Chemistry
Elementary Education
English
French
Geography
German
*Guidance
Health & Physical Education
Mathematics
Music
Physical Science
*Physics
Social Science
Spanish

1966 - 1967 SESSIONS

CATALOGUE NUMBER

VOL. 94 No. 4

May, 1966

WEST CHESTER STATE COLLEGE
WEST CHESTER, PENNSYLVANIA
1 9 3 8 0

*Depending upon Department of Public Instruction Approval.

CALENDAR 1966 - 1967
GRADUATE STUDIES

SUMMER SESSION
1966

June 4 (Sat.) (8:30-11:30 A.M.) ..... Registration, Pre Session
June 6 to 24 ..... Classes, Pre Session
June 27 (Mon.) (8:30-11:30 A.M. — 1:30-3:30 P.M.)
Registration, Summer Session
June 28 (Tues.) (8:00 A.M.) ..... Classes Begin
August 5 (Fri.) ..... Classes End
August 8 (Mon.) (8:30-11:30 A.M. — 1:30-3:30 P.M.)
Registration, Post Session
August 9 (Tues.) ..... Classes Begin
August 26 (Fri.) ..... Post Session Classes End

FALL SESSION — 1966
SPRING SESSION — 1967

September 10 (Sat.) (8:30-11:30 A.M.) ..... Registration, Fall
September 12 (Mon.) ..... Classes Begin
November 22 (Tues.) (Close of Classes) ..... Thanksgiving Recess Begins
November 28 (Mon.) (8:00 A.M.) ..... Thanksgiving Recess Ends
December 17 (Sat.) (Close of Classes) ..... Christmas Recess Begins
January 3 (Tues.) (8:00 A.M.) ..... Christmas Recess Ends
January 16 to 21 ..... Final Exams
January 21 (Sat.) ..... Semester Ends
January 28 (Sat.) ..... Registration, Spring
January 30 (Mon.) ..... Classes Begin
March 18 (Sat.) (Close of Classes ..... Easter-Spring Recess Begins
March 28 (Tues.) (8:00 A.M.) ..... Easter-Spring Recess Ends
May 18 to 25 ..... Final Exams
May 27 (Sat.) ..... Alumni Day
May 28 (Sun.) ..... Commencement

SUMMER SESSION — 1967

June 3 (Sat.) (8:30-11:30 A.M.) ..... Registration, Pre Session
June 5 to 23 ..... Classes Pre Session
June 26 (Mon.) (8:30-11:30 A.M. — 1:30-3:30 P.M.)
Registration, Summer Session
June 27 (Tues.) (8:00 A.M.) ..... Classes Begin
August 4 (Fri.) ..... Classes End
August 7 (Mon.) (8:30-11:30 A.M. — 1:30-3:30 P.M.)
Registration, Post Session
August 8 (Tues.) ..... Classes Begin
August 25 (Fri.) ..... Classes End

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I. WEST CHESTER STATE COLLEGE

History

Location

HISTORY OF THE COLLEGE

West Chester State College traces its history back to the early years of the nineteenth century. The College had its origin with the founding of the West Chester Academy in 1812. In 1871, the Academy became the West Chester Normal School, devoted to the preparation of teachers. When, in 1927, the Normal School was broadened to become the State Teachers College, the four-year program of teacher training was instituted. Still another milestone was marked on January 8, 1960, when the Pennsylvania State Legislature again enlarged the stature of the College, naming it the West Chester State College. This action opened the door for the College to become a multi-purpose institution. Currently the College offers the B.S., the B.A., and the M.Ed. Degrees.

Historically, the College has held as its primary objective the preparation of teachers for the public schools of Pennsylvania. West Chester offers the degree of Bachelor of Science in Education with majors in four basic curricula — Elementary, Secondary, Music, and Health and Physical Education — plus degree curricula for Public School Nurses and Dental Hygienists. The College has also instituted a program of courses designed to meet certification requirements for the teaching of mentally retarded and physically handicapped children.

In addition, West Chester maintains an extensive two-track program for teachers-in-service. One phase consists of evening and Saturday courses for those desiring to satisfy various professional needs, including certification requirements. The other phase consists of a graduate program leading to a Master of Education Degree in the following fields: elementary education, guidance counseling*, audio-visual education (materials instruction specialist)*, music education, health and physical education, and secondary education with specializations in English, social sciences, biological science, foreign languages, mathematics, chemistry*, physics*, physical science, and geography.

The second major objective of the College program is to provide a liberal college education for the youth of the Commonwealth. To this end, the College has been officially approved by the State Council of Education for the purpose of offering a liberal arts program in the areas of humanities, social sciences, geography, natural sciences, and mathematics.

The various programs at West Chester are comprehensive, designed to satisfy the intellectual, physical, and spiritual needs of all students. A wide span of extra-curricular activities — lectures, concerts, entertainments, and religious club programs among them — affords each student an opportunity to develop wholesome personality and character traits, to expand his talents, and to seek the fullest expression of his potential capacities.

*Depending upon Department of Public Instruction approval.

LOCATION OF THE COLLEGE

West Chester State College is situated in West Chester, the county seat of Chester County, Pennsylvania, a picturesque town of 16,000 in the heart of what is becoming a vital suburban area of greater Philadelphia.

The town, as well as the county, is rich in historic and cultural tradition. The residents of the region cherish and preserve their heritage, which traces back to the time when William Penn landed on the Delaware River. The College in turn, reflects the charm of a culture deeply influenced by the Society of Friends.

Within a short distance of the campus are the famous Longwood Gardens and the Valley Forge and Brandywine battle fields. Philadelphia, 25 miles to the east, and Wilmington, Delaware, 15 miles to the south, are easily accessible by train, bus, or car.

Of several arterial highways threading directly to West Chester, Route 100 is particularly suitable, especially for those approaching the town from the Pennsylvania Turnpike. The driver should depart from the Turnpike at Downingtown and select Route 100 South which takes him directly to the main campus on High Street in a matter of nine miles.

The College may also be reached by the following public transportation:

Train — via the Pennsylvania Railroad, which operates an extension from Philadelphia to West Chester. A timetable should be consulted. Passengers coming from the north may also connect with trains to Paoli at either the 30th Street or the Suburban station in Philadelphia, and change at Paoli to a Short Line bus from Paoli station to West Chester, a trip of nine miles. Similarly, Pennsylvania Railroad passengers coming from the west should get off at Paoli and proceed by bus.

Bus — Red Arrow Lines buses connect with the Philadelphia Market Street Subway at the 69th Street terminal. Short Line buses also provide frequent service between Wilmington and West Chester and the same bus system connects at the Downingtown and Coatesville bus terminals with Greyhound buses coming from the west. Locally, there is Short Line bus service throughout the day and evening for the trip of approximately a mile from the West Chester bus terminal to the College.

II. GRADUATE STUDY

Graduate Studies Program
Division of Graduate Study
Objectives

THE GRADUATE STUDIES PROGRAM AT WEST CHESTER

The present program was authorized by the State Board of Higher Education of the Commonwealth of Pennsylvania, effective on September 1, 1959.

The Master's Degree is awarded upon successful completion of all requirements, and because these vary from one curriculum to another, the student should check carefully the requirements listed under the department in which he is enrolled.

DIVISION OF GRADUATE STUDIES

Graduates of fully accredited colleges and universities may pursue courses of study leading to the Master's Degree in the areas of elementary education, secondary education, health and physical education, and music education. A student majoring in secondary education may choose a field of specialization in biology, chemistry*, English, foreign languages (French, Spanish, and German), geography, mathematics, physical science, physics*, social science, audio-visual education*, or guidance*. All inquiries concerning graduate study should be directed to the Dean of Graduate Studies.

OBJECTIVES OF THE GRADUATE PROGRAM

The graduate program has one major purpose: to increase the competence of the individual's academic discipline and/or professional education.

This program will:

1. Permit the teacher to earn the Master's Degree without interference with normal professional duties.
2. Permit the in-service teacher to secure permanent certification and to extend the present certification.
3. Provide the in-service teacher with the opportunity to improve his academic or professional position.
4. Provide students with an opportunity to pursue graduate study under well trained and experienced teachers.
5. Provide courses for professional growth for those who do not choose to attain the Master's Degree.
6. Provide an opportunity for those who do not plan to pursue teaching as a career, but wish to attain the Master's Degree. (See department chairman.)

*Depending upon approval by the Department of Public Instruction.

III. GRADUATE PROGRAM

Administration
Admission
Admission Requirements
Curricula

ADMINISTRATION

The graduate program is under the direction of the administrative officers of the College, the Academic Council of the College, the Graduate Council, and the administrative officers of the graduate program.

The Graduate Council performs the following functions: It establishes all major policies for the administration of the program; reviews all applications for admission, requests for special consideration, and recommendations of the major departments; and acts as the Executive Council for the college administration on all matters related to the graduate program.

The administrative officers of the graduate studies are the Dean of Graduate Studies and the individual department chairmen or co-ordinators of the graduate program. The faculty advisors in the graduate program function directly under their respective department chairmen. Graduate students having problems in their major field should consult first their advisors who, in turn, consult with the department chairmen or co-ordinators involved.

ADMISSION TO THE DIVISION OF GRADUATE STUDIES

The Division of Graduate Studies admits applicants who produce evidence of graduation from a college or university accredited by its national, regional, and professional accrediting agencies. Applicants' undergraduate records must also indicate a potential for success at the graduate level.

The Dean of Graduate Studies may admit students to the Division of Graduate Studies for varying purposes, among them:

1. To qualify for the Master's Degree
2. To meet certification requirements
3. To establish credit for other reasons
4. To gain personal growth without credit (Audit)

Application forms and bulletins are available from the Graduate Office.

ADMISSION REQUIREMENTS

Applicants for admission to Graduate Studies will be identified as degree or non-degree students. Regardless of this identification, the applicant should initiate his application for graduate study.

I. Procedure for gaining admission to graduate classes

A. Each applicant should file with the Dean of Graduate Studies an application for admission to graduate classes at least three weeks prior to the session in which he wishes to begin his graduate program. Application forms may be obtained by writing to the Dean of Graduate Studies.

B. Two official transcripts of the applicant's undergraduate and — if he has done prior work at the graduate level — his graduate work must be sent to the Dean of Graduate Studies. It is not necessary to submit an undergraduate transcript for work taken at West Chester State College.

C. When submitting his application, the applicant should request an appointment for a personal interview with the Dean of Graduate Studies.

D. Beginning with the Fall Semester, 1966, a fee of $10.00 will be charged for application for graduate work at West Chester. **This fee is not refundable.**

II. Requirements for admission to Degree candidacy

Graduate students who wish to be admitted for candidacy for the Master of Education Degree must:

A. File with the Dean of Graduate Studies an official application and a letter applying for admission to Degree candidacy.

B. Have completed not less than six hours nor more than 15 hours of graduate work at West Chester State College at the time of making application for Degree candidacy. These hours should include the three required courses for all curricula and at least two courses in the area of concentration. Since 15 hours is the maximum of graduate credit, earned at West Chester prior to admission to candidacy, which may be applied for the Master's Degree, students should apply for admission for Degree candidacy before they have completed more than 15 hours of graduate credit.

C. Have maintained a grade point average over all of not less than 2.75 (B—) in all graduate courses and have maintained an average of B in the courses in the area of concentration.

D. Have achieved a satisfactory score on the Graduate Record Examinations. (Refer to section on Examinations.)

E. Obtain approval of the Dean of Graduate Studies and the Graduate Council. (The College reserves the right to refuse admission to candidacy without being required to give reasons in writing.)

F. Show evidence of academic, personal, and professional qualities deemed acceptable by the administrators of the graduate program and the department concerned.

On the basis of the personal interview and data at hand, the Dean or the Department Chairman will draw up a program of studies to be followed by the student. It will include undergraduate deficiencies, if any, as well as minimum requirements in general education, professional education, and area of concentration.

An advisor will be appointed to direct the graduate work of each student. Generally this will be the chairman of the major department, or a member of the graduate faculty of that department, designated by the chairman.

III. Applicants for Non-Degree Studies

A. Applicants for Credit Work
(An applicant for credit work is one who desires to take courses for credit toward certification or for some other valid reason.)

The applicant must:

1. Make application for credit work.
2. Achieve a satisfactory score in the Graduate Record Examination.
3. Be able to demonstrate his academic competence to the chairman of the major department and the Dean of Graduate Studies.
4. Show evidence of prerequisite undergraduate work of creditable quality.
5. Have personal interviews, evidence of professional promise, and a satisfactory health record.
6. Submit two transcripts of undergraduate record. These must be official copies bearing the college seal.

B. Special Students

A special student is one who does not fall within any of the above categories. Instances of special students are:

1. The student who is taking work for his own edification.
2. The student who is undecided on his final goal.
3. The student who is taking work to be transferred to another institution.
4. The student who has a Master's Degree and is taking further graduate work.

C. Auditors (non-credit)

An auditor is one who, as the term implies, takes courses as a listener. No graduate credit of any type will be given for courses audited. He is required to pay the same fee as those who are taking courses for credit.

A student will be admitted as an auditor subject to the approval of the department chairman.

A student who registers to take a course for credit may change his status to that of an auditor if he makes this request in writing to the Dean of Graduate Studies prior to the sixth meeting of the class.

IV. Applicants for Advanced Standing

An applicant for advanced standing is one who desires to transfer credits from another graduate school.

Such credits will be honored under the following conditions:

A. The credits must have been earned at an approved graduate school.

B. The maximum number may not exceed six. All requirements beyond these six credits must be satisfied at West Chester State College.

C. The transfer course grades must be B or better.

D. The courses involved must be essentially the same as graduate courses offered at this institution.

E. The college will accept in transfer only courses taken at other approved graduate schools or courses taught by regular members of the full-time faculty of other approved graduate schools at off-campus extension centers.

PLEASE NOTE: Applicants failing to qualify as degree candidates become non-degree students. After they have demonstrated competence by earning a B average in the first five graduate courses (two of which must be in the major field of concentration), they may reapply to become degree candidates. Such admission is not automatic.

SUMMARY OF REQUIREMENTS FOR THE MASTER'S DEGREE

The Master's Degree will be granted upon:

1. Unrestricted admission to candidacy for the Degree.
2. Submission and approval of the professional research thesis in the thirty-credit program or satisfactory completion of the thirty-four credit program.
3. Completion of all graduate courses with the grade of C or better, and with an over-all quality point average of 2.75 (B—).
4. Satisfactory performance on a final oral and/or written comprehensive examination conducted by the student's advisory committee in the field of specialization.
5. Evidence of successful teaching experience as approved by the Chairman of the Department in which the graduate student is enrolled. Other experience in lieu of this requirement must be approved by the Graduate Council.

CURRICULUM FOR THE MASTER OF EDUCATION DEGREE

COURSE REQUIREMENTS

In order to obtain a degree of Master of Education, the student must complete a minimum of thirty (30) semester hours of credit in the Thesis Program or thirty-four (34) semester hours of credit in the Non-Thesis Program. The student, however, should not think of the Master's Degree in terms of semester credits. He should think, rather, in terms of meeting the standards established by the Graduate Council and by his major department.

At all times it is advisable for the student to keep in contact with the Dean of Graduate Studies and the adviser of the major department.

The requirements stated below are the broad general requirements established by the Graduate Council. In addition to these requirements, each department has individual requirements. The student, therefore, should first familiarize himself with the requirements below. Then he should turn to the specific section in this bulletin which treats the requirements established by his major department.

Semester Credits

I. *General Education* 2-4
A. Required 2
Hum 500 Humanities 2
B. Free Elective 0-2
General Education Courses
(under advisement)

II. *Professional Education* 6-8
A. Required 4
Edu 510 Educational Foundations 2
Res 500 Methods and Materials of Research 2
B. Electives
Methods Course such as Modern Techniques in
Teaching of . . . etc. 2-3
Professional Education Course (under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 15-19
A. Required Courses in Major Field
B. Electives under advisement

IV. *Research* 3-5
A. Thesis 3
B. Seminar 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration* 22-26
A. Required Courses in Major Field
B. Electives under advisement

IV. *Research* 0-2
A. Research Report 0-2
B. Seminar or Supporting Electives 0-2

AUDIO-VISUAL EDUCATION*

(Materials Instruction Specialist)

NON-THESIS PROGRAM ONLY (34 s.c.)

Semester Credits

CURRICULUM

A. *Courses required of all students — 6 s.c.*

Hum	500	Seminar in the Humanities	2
Edu	500	Methods and Materials of Research	2
Edu	510	Seminar in Educational Foundations	2

B. *Courses in Field of Specialization* — 18-23 *s.c.*

Required Courses — 11 s.c.

Edu	530	Selection and Effective Utilization of Instructional Materials	3
Edu	535	Organization and Administration of the Audio-Visual Program	2
Edu	580	History, Philosophy, and Psychology of Audio-Visual Education	2
Edu	582	Seminar in Research Communications	2
Edu	585	Library Science	2

*Depending upon Department of Public Instruction approval.

Semester Credits

Electives — 7-12 s.c.

Edu	527	Audio-Visual Materials in the Elementary School	2
Edu	528	Production of Projected Still Materials	3
Edu	529	Production of Non-Projected Materials	3
Edu	532	Photography for Teachers	3
Edu	533	Television in Education	3
Edu	534	Seminar in Instructional Materials	2
Edu	581	The Motion Picture in Education	2
Edu	583	Audio-Visual Materials in the Secondary School	2
Edu	584	Teaching Machines and Programmed Learning	2

C. *Courses in Professional Area* — 2-6 *s.c.*

Required Courses

Edu	550	Advanced Educational Psychology	3

Electives

Edu	502	Secondary School Curriculum	2
Edu	517	Curriculum Problems in Elementary Education	2

D. *Electives to be taken in Academic Disciplines Under Advisement* 0-8

BIOLOGY

Candidates for the Master's Degree in this field must meet the general requirements stated below:

Minimum requirements before admission to candidacy is granted are two semesters of general college chemistry, one semester of organic chemistry, two semesters of biology, including general botany and general zoology. All undergraduate deficiencies must be met prior to filing for degree candidacy.

Semester Credits

I. *General Education* 2-4

A. Required 2

Hum	500	Humanities	2

B. Free elective

General Education courses (under advisement) 0-2

II. *Professional Education* 6-8

A. Required 4

Edu	510	Educational Foundations	2
Res	500	Methods and Materials of Research	2

B. Elective 2-4

Bio	503	Modern Techniques of Teaching Biology	2

General and Specialized Professional Education (under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 18-22

A. Recommended Courses* 9

**Bio	501	Introduction to Biochemistry for Teachers	3
Bio	516	Physiology of Plants	3
**Bio	522	Ecology for Teachers	3
**Bio	525	Experimental Physiology for Teachers	3
Bio	530	Genetic Theory	3

* Any Recommended courses may be waived and other electives substituted if the undergraduate background included suitable courses in these areas.
**Provides excellent background for the teaching of the B.S.C.S. Versions.

			Semester Credits
B. Elective (under advisement)			6-10
Bio	511	Systematic Botany	3
Bio	512	Plant Growth	3
Bio	514	Plant Pests and Diseases	3
Bio	517	Advanced Plant Anatomy and Morphology	3
Bio	524	Experimental Biology	3
Bio	526	Biochemistry I and II	3-6
Bio	532	Experimental Genetics	3
Bio	533	Advanced Embryology I and II	3-6
Bio	538	Systematic Zoology	3
Bio	539	Insect Morphology	3
Bio	541	Economic Entomology	3
Bio	542	Animal Ecology	3
Bio	543	Fresh Water Biology	3
Bio	545	Developmental Anatomy	3
Bio	547	Laboratory Techniques	3
Bio	561	Human Heredity	3
Bio	571	Advanced Bacteriology	3
Bio	575-76	Mycology I and II	3-6
Bio	591	History of Biology	3
C. Research			3-5
Bio	610	Research Thesis	3
Bio	599	Seminar	0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration*			22-26
A. Recommended Courses*			12
**Bio	501	Introduction to Biochemistry for Teachers	3
Bio	516	Physiology of Plants	3
Bio	517	Advanced Plant Anatomy and Morphology	3
**Bio	522	Ecology for Teachers	3
**Bio	525	Experimental Physiology for Teachers	3
Bio	530	Genetic Theory	3
B. Elective (under advisement)			10-14
Bio	511	Systematic Botany	3
Bio	512	Plant Growth	3
Bio	514	Plant Pests & Diseases	3
Bio	524	Experimental Biology	3
Bio	526	Biochemistry I and II	3-6
Bio	532	Experimental Genetics	3
Bio	533	Experimental Embryology	3-6
Bio	538	Systematic Zoology	3
Bio	539	Insect Morphology	3
Bio	541	Economic Entomology	3
Bio	542	Animal Ecology	3
Bio	543	Fresh Water Biology	3
Bio	545	Developmental Anatomy	3
Bio	547	Laboratory Techniques	3
Bio	561	Human Heredity	3
Bio	571	Advanced Bacteriology	3
Bio	575-76	Mycology I and II	3-6
Bio	591	History of Biology	3

* Any Recommended courses may be waived and other electives substituted if the undergraduate background included suitable courses in these areas.
**Provides excellent background for the teaching of the B.S.C.S. Versions.

Semester Credits

C. Research 0-2
Bio 600 Research Report 0-2
Bio 599 Seminar 0-2

CHEMISTRY*

I. *General Education* 2-4
Required 2
Hum 500 Humanities 2
Free Elective 0-2
General Education
(under advisement)

II. *Professional Education*
Required 4
Edu 510 Educational Foundations 2
Res 500 Methods and Materials of Research .. 2
Elective 2-4
Che 502 Modern Trends in Teaching Chemistry 2
Professional Education
General or Specialized
(under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 18-22
A. Required Courses 12
Che 511 Advanced Inorganic Chemistry 3
Che 513 Chemistry of the
Less Common Elements 2
Che 521 Advanced Analytical Chemistry 3
Che 531 Advanced Organic Chemistry 3
Che 541 Special Topics in Physical Chem. 3

B. Elective (under advisement) 6-10
Che 501 History and Philosophy of Chemistry 1
Che 515 Inorganic Preparations 2
Che 523 Industrial Chemistry Processes 3
Che 533 Physical Organic Chemistry 3
Che 535 Qualitative Organic Analysis 3
Che 538 Organic Preparations 2
Che 543 Theory of Valence 2
Che 545 Chemical Thermodynamics 2
Che 551 Chem. of Coordination of Comp's 3
Che 561 Nuclear and Radiochemistry 2
Che 563 Electrochemistry 3

C. Research 3-5
a. Che 610 Thesis 3
b. Che 591 Seminar 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration* 22-26
A. Required 12
Che 511 Advanced Inorganic Chemistry 3
Che 513 Chemistry of the
Less Common Elements 2
Che 521 Advanced Analytical Chemistry 3
Che 531 Advanced Organic Chemistry 3
Che 541 Special Topics in Physical Chemistry 3

*Depending upon Department of Public Instruction approval.

			Semester Credits
B.	Electives (under advisement)		10-14
	Che 501	History and Philosophy of Chemistry	1
	Che 515	Inorganic Preparations	2
	Che 523	Industrial Chemistry Processes	3
	Che 533	Physical Organic Chemistry	3
	Che 535	Qualitative Organic Analysis	3
	Che 538	Organic Preparations	2
	Che 543	Theory of Valence	2
	Che 545	Chemical Thermodynamics	2
	Che 551	Chem. of Coordination of Comp's	3
	Che 561	Nuclear and Radiochemistry	2
	Che 563	Electrochemistry	3
C.	Research		0-2
	Che 581	Research Report	0-2
	Che 591	Seminar	0-2

EDUCATION

(Electives Open to All Fields)

The Department of Education offers professional courses for students of all curricula. In this capacity, it will offer the electives listed below.

For students majoring in elementary education, however, the Department of Education has constructed the specific curriculum which follows the general electives.

All students majoring in elementary education should consider the Department of Education as their major department. All elementary education majors will be assigned to an advisor in the Department of Education.

			Semester Credits
Edu	502	Secondary School Curriculum	2
Edu	506	The Junior High School	2
Edu	508	The Core Curriculum	2
Edu	509	Contemporary Teaching Trends	2
Edu	520	Comparative Education	3
Edu	525	The Teacher and Administrative Leadership	2
Edu	526	Programmed Instruction	2
Edu	528	The Production of Projected Still Materials	3
Edu	529	The Production of Non-Projected Materials	3
Edu	530	Selection and Effective Utilization of Instructional Materials	3
Edu	532	Photography for Teachers	3
Edu	533	Television in Education	3
Edu	534	Seminar in Instructional Materials	2
Edu	535	Organization and Administration of the A-V Program	2
Edu	540	In-Service Education Seminar	2
Edu	541	Creative Teaching	2
Edu	542	Curriculum Development for Culturally Disadvantaged Children	2
Edu	550	Advanced Educational Psychology	3
Edu	566	The Activity Program in the Secondary School	2
Edu	580	History and Philosophy of Education	3
Edu	581	The Motion Picture in Education	2
Edu	590	School Law	2
Gui	500	Principles and Techniques of Guidance	2
Gui	564	Homeroom Guidance	2
Gui	567	Group Guidance	2
Gui	570	Principles and Techniques of Interviewing and Counseling	2

			Semester Credits
Psy	554	Group Dynamics	2
Psy	557	Psychology of Adjustment	2
Psy	562	Psychology of Personality	2
Psy	570	Psychology of Mentally Atypical Children	2
Psy	571	Methods and Materials for Mentally Atypical Children (Elementary)	2
Psy	574	Methods and Materials for Mentally Atypical Children (Secondary)	2
Psy	575	Psychology of Physically Atypical Children	2
Psy	576	Methods and Materials for Physically Atypical Children	2
SpE	540	Workshop in Special Education	4

ELEMENTARY EDUCATION

Candidates for the Master's Degree with a major in elementary education are expected to be students who are or plan to become elementary school teachers, or who have other reasons for pursuing this program that are acceptable to the Department of Education. Since this degree should represent a broad knowledge of the major field, students whose undergraduate major was not elementary education may be required — at the discretion of the Department of Education — to take additional course work in excess of the minimum credit hour requirements.

Degree candidates in elementary education must meet the course requirements outlined below, which include the general requirements in all curricula and the specific departmental requirements. In addition, each student must be prepared to take any course deemed necessary for him by the Department of Education, either within or beyond these requirements. Students are advised to choose electives in consultation with faculty members who specialize in elementary education.

			Semester Credits
I.	Required Courses		6
Hum	500	Humanities	2
Edu	500	Methods and Materials in Research (Elementary)	2
Edu	510	Educational Foundations	2

II. *Area of Specialization — Thesis Program ..... 19-21; Non-Thesis Program 26-28

A. Program for degree candidates whose undergraduate major was elementary education.

Required 9

Edu	504	Reading in the Content Areas	2
Edu	517	Curriculum Problems in Elementary Education	2
Edu	550	Advanced Educational Psychology	3
Psy	553	Seminar in Child Development and Behavior II: The Case Study Approach	3

Electives

Thesis Program 10-12
To include at least **four** courses selected from among the elementary education electives listed below. All electives to be chosen under advisement.

Non-Thesis Program 18-20
To include at least six courses selected from among the elementary education electives listed below. All electives to be chosen under advisement.

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* Candidates for the Master's Degree with a major in elementary education must meet the requirements for a Provisional Certificate in Pennsylvania, or its equivalent, before being admitted to degree candidacy.

B. Program for degree candidates who are certified to teach but whose undergraduate major was not elementary education. (NOTE: Thesis program is not recommended for these candidates.)

Required			*Semester Credits*
Edu	501	Foundations of Reading Instruction	3
Edu	503	Social Studies in Elementary Education	2
Edu	504	Reading in the Content Areas	2
Edu	513	Teaching the Communication Skills	2
Edu	516	The Teacher in the Elementary School	2
Edu	517	Curriculum Problems in Elementary Education	2
Edu	550	Advanced Educational Psychology	3
Mat	555	Modern Techniques of Teaching Elementary School Mathematics	2
*Psy	551	Seminar in Child Development and Behavior I: Aspects of Growth	3

Electives

Thesis Program 5-7
A minimum of three courses, to be selected under advisement, from among the elementary education electives listed below.

Non-Thesis Program 12-14
To include at least five courses selected from among the elementary education electives listed below. All electives to be chosen under advisement.

C. Program for degree candidates whose undergraduate degree was not in elementary education and/or who do not hold any type of teaching certificate.

The program outlined below will provide the candidate with the courses necessary for certification and the master's degree with a major in elementary education. Approval for student teaching is contingent on the completion of required courses and departmental permission.

The following are basic requirements:

1. *Required Undergraduate Course Work*

Edu	309	Language Arts	6
Edu	350	Educational Psychology	3
Edu	411	Student Teaching and Practicum	12
			21

2. *General Education Requirements (Graduate)*

Hum	500	Humanities	2
Edu	500	Methods and Materials of Research	2
Edu	510	Educational Foundations	2
			6

3. *Specialized Preparation Requirements (Graduate)*

Edu	503	Social Studies in Elementary Education	2
Edu	504	Reading in the Content Areas	2
Edu	516	The Teacher in the Elementary School	2
Edu	517	Curriculum Problems in Elementary Education	2
Edu	550	Advanced Educational Psychology	3
*Psy	551	Seminar in Child Development and Behavior I: Aspects of Growth	3
Mat	555	Modern Techniques of Teaching Elementary School Mathematics	2
			16

* Students who have had a recent basic course in child development or child psychology may, by permission of the instructor in Psy 551, substitute Psy 553 (Seminar in Child Development and Behavior II: The Case Study Approach).

Semester Credits

4. *Electives*
(To be selected under faculty advisement) 12

III. Research 3-5

Thesis Program
Thesis 3
Seminar or Supporting Electives 0-2

Non-Thesis Program
Research Report
Seminar or Supporting Electives 0-2

Electives

Group 1. All electives must be chosen under advisement. Degree candidates are advised to take a minimum of two courses from Group 1.

Art	500	Art Activities at the Elementary School Level	2
Edu	507	Social Studies Curriculum and Instruction	2
Edu	511	Unit Teaching in the Elementary School	2
Edu	565	Improving Instruction through Efficient Classroom Management	2
Eng	544	Problems of Speech Correction	2
Eng	550	Literature for the Elementary School	2
HEd	502	Elementary Physical Education Workshop	2
HEd	541	School-Community Health Education Workshop	3
Mus	573	Keyboard Activities for the Classroom Teacher	2
Mus	572	Vitalizing Music in the Elementary Grades	2
Mus	574	Teaching of Music Appreciation in the Elementary Grades	2
Bio	523	Resource Materials in Elementary Science	3
Bio	595	Elementary Science and Instruction	3
Lan	502	Fles	2
Psy	553	Seminar in Child Development and Behavior II: The Case Study Approach	3
Mat	501	Fundamental Concepts of Mathematics I	3
Mat	502	Fundamental Concepts of Mathematics II	3
Mat	555	Modern Techniques of Teaching Elementary School Mathematics	2
Mat	556	The Development of the Mathematics Curriculum in the Elementary Grades	2
Edu	503	Social Studies in Elementary Education	2

Group 2. All electives must be chosen under advisement. Degree candidates are advised to take a minimum of two courses from Group 2.

Edu	505	Curriculum and Research in Language Arts	2
Edu	515	Meeting Individual Needs of Elementary School Children	2
Edu	517	Curriculum Problems in Elementary Education	2
Edu	519	The Kindergarten-Primary School Program	2
Edu	521	Analysis, Diagnosis and Correction of Reading Difficulties	2
Edu	523	Supervision in the Improvement of Instruction	2
Edu	527	Audio-Visual Materials in the Elementary School Curriculum	2
Edu	530	Selection and Effective Utilization of Instructional Materials	3
Edu	561	Guidance in the Elementary School	3
Edu	563	Measurement and Evaluation in the Elementary School	2
Edu	565	Improving Instruction through Efficient Classroom Management	2
Edu	567	Creative Expression in the Elementary School Curriculum	2

ENGLISH

The candidate for the Master's Degree with a major in English must meet the general requirements as shown in the outline below, and he must meet the specific departmental course requirements as stated below the outline.

Semester Credits

I. *General Education* 2-4
Required 2
Hum 500 Humanities
Free Elective 0-2
General Education (under advisement)

II. *Professional Education* 6-8
Required 4
Edu 510 Educational Foundations 2
Res 500 Methods and Materials of Research 2
Elective 2-4
Eng 501 Modern Techniques for the Teaching of English 2
Professional Education (General or Specialized) (under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 15-19
A. Required Courses in Major Field
B. Electives under Advisement

IV. *Research* 3-5
Thesis 3
Seminar 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration* 22-26

IV. *Research* 0-2
Research Report 0-2
Seminar or Supporting Electives 0-2

Below are listed three groups of courses under A, B, C. Every English major student should have a minimum of one course from each group, and he must have a minimum of eight courses from the three groups if he writes a thesis — or a minimum of eleven courses from the three groups if he elects the 34-hour option. In addition, he must be prepared to take any course deemed necessary by his advisor.

Group A

Lit	511	English Literary Criticism (1800-1960)	2
Lit	512	American Literary Criticism (1800-1960)	2
Lit	514	American Literary Movements	2
Eng	502	History of the English Language	2

Group B

Lit	521	English Literature to Chaucer	2
Lit	522	Chaucer	2
Lit	523	Eighteenth Century Novel	2
Lit	524	British and Continental Short Story	2
Lit	525	Biography	2
Lit	526	Tudor Poetry and Prose	2
Lit	527	Stuart Literature	2
Lit	528	Milton	2

			Semester Credits
Lit	529	Victorian Prose	2
Lit	530	Victorian Poetry	2
Lit	531	Shakespeare's Predecessors in Drama	2
Lit	532	Advanced Shakespeare	2
Lit	533	Romantic Prose and Poetry	2
Lit	542	Spenser	2
Group C			
Lit	534	Nineteenth Century American Prose	2
Lit	535	Twentieth Century American Writers	2
Lit	536	Twentieth Century Drama	2
Lit	537	Emerson and Thoreau	2
Lit	538	Hawthorne and Melville	2
Lit	541	Greek and Roman Literature in Translation	2

ENGLISH SERVICE COURSES

The following courses are offered as a service to teachers. Open to anyone, they may be offered as part of the English program under certain conditions.

			Semester Credits
Eng	543	Advanced Problems in Public Speaking	2
Eng	544	Problems of Speech Correction	2
Eng	501	Modern Techniques of English	2
Lit	550	Literature for the Elementary School	2
ThA	536	Television I: Equipment, Planning, and Production	3
ThA	537	Television II: Equipment, Planning, and Production	4
ThA	538	Television: Production of Graphic Arts	3

FOREIGN LANGUAGES

The candidate for the Master's Degree with a major in French, Spanish or German must meet the general requirements as shown in the outline below, and he must meet the specific departmental course requirements as stated below the outline.

Semester Credits

I. *General Education* 2-4
Required 2
Hum 500 Humanities 2
Free Elective
General Education (under advisement) 0-2

II. *Professional Education* 6-8
Required 4
Edu 510 Educational Foundations 2
Lan 500 Methods and Materials of Research 2
Elective
Lan 503 Techniques of Language Teaching 2
Professional Education
General or Specialized (under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 15-19
A. Required Courses in Major Field
B. Electives under advisement

IV. *Research* 3-5
Thesis 3
Seminar 0-2

NON-THESIS PROGRAM (34 s.c.)

	Semester Credits
III. *Area of Concentration*	22-26
IV. *Research*	0-2
Research Report	0-2
Seminar	0-2

Below are listed four groups of courses. Group I includes courses common to all majors in French, Spanish, or German. Every major student must have a minimum of two courses from Group I, and he must have a minimum of six courses from those in Group II, III, or IV listed under his respective language. All foreign language courses are for three semester credits, except those listed under Group I, which are for two semester credits.

			Semester Credits
Group I (Professional Education)			
Lan	500	Methods and Materials of Research	2
Lan	501	Linguistics	2
Lan	502	FLES	2
Lan	503	Techniques of Language Teaching	2
Lan	504	Language Laboratory Techniques	2
Group II			
Fre	511	Romance Philology	3
Fre	512	Explication de Texte	3
Fre	513	Phonetics	3
Fre	514	Advanced Grammar and Composition	3
Fre	520	Rabelais and Montaigne	3
Fre	522	Voltaire and Rousseau	3
Fre	523	Proust	3
Fre	524	Gide	3
Fre	530	French Classical Tragedy	3
Fre	531	The French Novel (to the end of the 19th Century)	3
Fre	532	The 20th Century French Novel	3
Fre	533	French Lyric Poetry	3
Fre	534	The Contemporary French Theater	3
Group III			
Ger	511	German Philology	3
Ger	512	German Civilization	3
Ger	513	Phonetics	3
Ger	514	Advanced Grammar and Composition	3
Ger	520	The Age of Goethe	3
Ger	521	Goethe	3
Ger	522	Schiller	3
Ger	530	German Reformation, Baroque and Pseudo-Classicism	3
Ger	531	German Literature of the 19th Century	3
Ger	532	German Drama of the 19th and 20th Centuries	3
Ger	533	Middle High German Literature	3
Ger	540	The German Short Story	3
Ger	541	Modern German Poetry	3
Ger	542	Modern German Novel	3
Group IV			
Spa	510	Advanced Spanish Phonetics	3
Spa	511	Advanced Spanish Grammar and Stylistics	3
Spa	512	Spanish Civilization	3
Spa	520	Cervantes	3
Spa	521	Lope de Vega	3
Spa	522	Calderon	3
Spa	530	Medieval Spanish Literature	3
Spa	531	Spanish Renaissance and Humanism	3
Spa	532	Nineteenth Century Spanish Literature	3

			Semester Credits
Spa	533	The Generation of 1898	3
Spa	540	The Picaresque Novel	3
Spa	541	The Modern Spanish Theatre	3
Spa	542	Lyric Poetry	3
Spa	550	The Spanish American Novel	3

GEOGRAPHY

The candidate for the Master's Degree with a major in geography must meet the general requirements as shown in the outline below, and he must meet the specific departmental course requirements as stated below the outline.

I. *General Education* 2-4
Required
Hum 500 Humanities 2
Free Elective 0-2
General Education (under advisement)

II. *Professional Education* 6-8
Required 4
Edu 510 Educational Foundations 2
Res 500 Methods and Materials of Research 2
Elective 2-4
Geo 588 Modern Techniques of Teaching Geography 2
Professional Education 0-2
(General or Specialized)
(under advisement)

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 15-19
A. *Required Courses in Major Field
B. Electives (under advisement)

IV. *Research* 3-5
Thesis 3
Seminar 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration* 22-26
A. *Required Courses in Major Field
B. Electives (under advisement)

IV. *Research* 0-2
Research Report 0-2
Seminar 0-2

Group I. EARTH STUDIES

Geo	500	Biogeography	2
Geo	501	Geomorphology	3
Geo	502	Regional Physiography of North America	3
Geo	503	General Climatology	3
Geo	504	Regional Climatology of the Continents	3
Geo	505	Advanced Cartography	3
Geo	506	Advanced Physical Geography for Teachers	3
Geo	507	Advanced Map Interpretation	3

* The candidate for the master's degree in geography must select a program of courses from the elective groups listed below. A minimum of two courses from groups I, II, III and the remaining courses necessary to fulfill the general requirements, must be chosen with the approval of the faculty adviser.

Semester Credits

Group II. ECONOMIC AND POLITICAL STUDIES

Geo	520	Problems of Economic Geography	3
Geo	521	World Economic Patterns	3
Geo	522	Agricultural Geography	3
Geo	523	Advanced Conservation of Natural Resources	3
Geo	524	Ethnic and Demographic Problems of Geography	2
Geo	525	Geography of Regional Planning	3
Geo	526	Urban Geography	3
Geo	527	Political Geography	2
Geo	528	Concepts of Modern Global Geography	2
Geo	529	Geographic Influences in World History	3

Group III. REGIONAL STUDIES

Geo	540	Geography of the United States	3
Geo	541	Geography of the United States in its World Relations	3
Geo	542	Geography of Canada	3
Geo	543	Geography of Mexico and Middle America	3
Geo	544	Geography of South America	3
Geo	545	Geography of Europe (Excluding the U.S.S.R.)	3
Geo	546	Geography of the Soviet Union	3
Geo	547	Geography of Asia (Excluding the U.S.S.R.)	3
Geo	548	Geography of the Pacific Lands	3
Geo	549	Geography of Africa	3

Group IV. SPECIAL STUDIES IN GEOGRAPHY

Geo	580	Seminar in Geography in Education	2
Geo	581	Seminar in Modern Philosophy of Geography	2
Geo	582	Seminar in Geographic Literature	2
Geo	583	Seminar in Geographic Writing	2
Geo	584	Seminar in Geographic Research	2
Geo	585	Geography Field Course	3
Geo	586	Area Field Studies (Courses I, II and III)	3-9
Geo	587	Geography Workshop for Teachers	3

GUIDANCE*

Students working for this degree with a major in Guidance will complete a minimum of 30 semester hours of work in the thesis program or a minimum of 34 semester hours in the non-thesis program with primary research project which can be fulfilled in Methods and Materials in Research (Edu 500). Candidates wishing to do guidance work in the public school system must have or earn a provisional certificate to teach. A Master's Degree from an approved school of social work plus an additional six hours of credit in the following areas will fulfill necessary requirements:

1. Principles of Elementary or Secondary Education
2. Elementary or Secondary School Curriculum

Those planning to do guidance work in industry and other non-school occupations need not have or need not obtain the provisional certificate to teach.

Semester Credits

I. *Required* (General Courses)

Edu	510	Seminar in Educational Foundations	2
Edu	500	Methods and Materials in Research	2
Hum	500	Seminar in the Humanities	2

II. *Subject Matter Concentrations* — fourteen to twenty-two (14-22) semester hours of work, including subject matter content to be selected from the following courses for State certification:

*Depending upon Department of Public Instruction approval.

			Semester Credits
Gui	500	Principles and Techniques of Guidance	2
Psy	551	Seminar in Human Development and Behavior (child)	3
Psy	552	Seminar in Human Development and Behavior (adolescent and adult)	2
Psy	553	Study of the Individual: child case studies	2
Psy	554	Study of the Individual: adolescent and adult case studies	2
Edu	566	The Activity Program in the Secondary School Guidance	2
Gui	556	Occupational, Educational and Social Information in Guidance	2
Gui	570	Principles and Techniques of Interviewing	2
Gui	562	Organization and Administration of the School Guidance Program	2
Gui	567	Group Guidance	2
Gui	571	Clinical Techniques in Guidance	2
Gui	565	Supervising the Guidance Program	2
Gui	541	Evaluative Methods in Guidance II (for secondary majors)	2
Gui	564	Homeroom Guidance	2
Edu	561	Guidance in the Elementary School (required for elementary school counselors)	3
Gui	572	Introduction to Rehabilitation Counseling	2
Psy	573	Human Development: Psychology of Maturing and Aging	2
Gui	540	Evaluative Methods in Guidance I (General for both elementary or secondary school majors)	2

III. *Professional Studies* — Five to ten (5-10) semester hours of work, including Research Report or the Thesis, to be selected from the following:

Mat	521	Educational Statistics	2
Mat	522	Advanced Educational Statistics	2
Edu	530	Selection and Effective Utilization of Audio-Visual Materials	2
Psy	542	Measurement of Interest and Personality	2
Psy	570	Psychology of the Mentally Atypical Child	2
Psy	562	Psychology of Personality	2
Psy	563	Mental Hygiene	2
Psy	580	Individual Psychometric Techniques: The Wechsler Scales	2
Psy	581	Individual Psychometric Techniques: The Binet Scales	2
*Gui	590	Practicum in Guidance	4
Edu	517	Curriculum Problems in Elementary Education (or)	2
Edu	502	Secondary School Curriculum	2

IV. *Electives* (Outside of Field) 3 to 6 credits
(Electives should be taken under advisement and in terms of need)

Sociology

Soc	531	Social Pathology	3
Soc	532	Historical Sociology	3

Science and English, etc. to be recommended by the departments.

V. *Research Paper or Thesis* (Required) 1-3

Note—Assistance will be provided for selecting course appropriate for those planning to work in elementary or secondary schools for State certification in the public schools.

* Required courses for degree.

HEALTH AND PHYSICAL EDUCATION

				Semester Credits
I.	*Required Courses*			6
A.	Hum	500	Humanities	2
B.	HEd	500	Methods and Materials of Research (Health and Physical Education)	2
C.	Edu	510	Educational Foundations	2

THESIS PROGRAM (30 s.c.)

II.	*Area of Specialization*			19-21
A.	Required Courses			
HEd	530		Scientific Bases for Physical Education	3
HEd	550		Foundations and Principles of Health, Physical Education and Recreation	3
HEd	561		Statistics in Health and Physical Education	3
B.	Electives chosen under advisement			
III.	*Research*			3-5
A.	Thesis			3-5

NON-THESIS PROGRAM (36 s.c.)*

II.	*Area of Specialization*			26
A.	Required Courses in major field			
B.	Electives chosen under advisement			
	The student must include courses in the following:			
HEd	530		Scientific Bases for Physical Education	3
HEd	550		Foundations and Principles of Health, Physical Education and Recreation	3
HEd	561		Statistics in Health and Physical Education	3
HEd	562		Administrative and Supervisory Practices in Health, Physical Education and Rec.	3
HEd	570		Curriculum Development in Health and Physical Education	3
HEd	521		Administration and Supervision of Interschool and Intramural Athletics	3
			This course may be substituted for HEd 562.	
III.	*Research*			0-4
A.	Research Report			0-4
Electives				
HEd	501		Advanced Rhythmical Foreign Gymnastics	2
HEd	502		Elementary Physical Education Workshop	2
HEd	503		Advanced Aquatics	2
HEd	504		Dance in Education	2
HEd	510		School and Community Recreation	2
HEd	511		Field Problems in Recreation	2
HEd	512		Outdoor Education Workshop	2
HEd	520		Advanced Coaching	3
HEd	521		Administration and Supervision of Interschool and Intramural Athletics	3
HEd	531		Adaptive Physical Education Workshop	3
HEd	532		Modified Physical Education	2
HEd	533		Remedial Physical Education	2
HEd	534		Modern Principles of Athletic Training	2
HEd	540		School Health Problems	3
HEd	541		School Community Health Education Workshop	3
HEd	550		Foundations and Principles of Health, Physical Education, and Recreation	3

* Dependent upon approval of Graduate Council.

			Semester Credits
HEd	551	Seminar: Professional Literature in Health, Physical Education and Recreation	3
HEd	560	Contemporary Problems in Health, Physical Education, and Recreation	3
HEd	561	Statistics in Health and Physical Education	3
HEd	562	Administration and Supervisory Practices in Health, Physical Education, and Recreation	3
HEd	563	Scientific Measurement and Instrumentation	2
HEd	564	The Bio-dynamics of Human Performance	3
HEd	570	Curriculum Development in Health and Physical Education	3
HEd	571	Comparative Physical Education: Contemporary Foreign Programs	3
HEd	572	The Child and Physical Education	3
HEd	580	Contemporary Practices in Safety Education	2

MATHEMATICS

The candidate for the Master's Degree with a major in mathematics must meet the general requirements as shown in the outline below, and he must meet the specific departmental course requirements as stated below the outline.

I. *General Education* 2-4
- A. Required 2
  - Hum 500 Humanities 2
- B. Free elective 0-2
  (under advisement)

II. *Professional Education* 6-8
- A. Required 4
  - Edu 510 Educational Foundations 2
  - Mat 500 Methods and Materials of Research in Mathematics Education 2
- B. Elective 2-4
  - Mat 550* Modern Techniques of Teaching Secondary School Mathematics 2
  - Mat 551* Teaching Secondary School Mathematics to the Low Achiever 2
  - Professional Education
    General or specialized 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Specialization* 15-19
- A. Required courses in Major Field — Must include courses in each of the major areas of algebra, geometry, analysis, and statistics.
- B. Electives chosen under advisement

IV. *Research* 3-5
- A. Thesis 3
- B. Seminar or Supporting Electives 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Specialization* 22-26
- A. Required Courses in Major Field — Must include courses in each of the major areas of algebra, geometry or topology, analysis, and statistics.
- B. Electives chosen under advisement

III. *Research* 0-2
- A. Research Report 0-2
- B. Seminar or Supporting Electives 0-2

The candidate for a Master's Degree with a major in mathematics must select his Area of Specialization program from the courses listed below. This program must meet the approval of the faculty advisor.

			Semester Credits
Mat	503	History of Mathematics	2
Mat	505	Theory of Sets	3
Mat	512	Modern Algebra	3
Mat	513	Matrix Algebra	3
Mat	514	Theory of Numbers	3
Mat	523	Mathematical Statistics I	3
Mat	524	Mathematical Statistics II	3
Mat	532	Modern Geometry	3
Mat	533	Projective Geometry	3
Mat	535	Topology	3
Mat	541	Advanced Calculus I	3
Mat	542	Advanced Calculus II	3
Mat	543	Differential Equations	3
Mat	545	Real Variable	3
Mat	547	Complex Variable	3
Mat	550*	Modern Techniques of Teaching Secondary School Mathematics	2
Mat	551*	Teaching Secondary School Mathematics to the Low Achiever	2

* Depending upon Department of Public Instruction approval.

MUSIC EDUCATION

The candidates for the Master's Degree with a major in music education must meet the general course requirements as stated below. In addition, he must meet whatever requirements the Department of Music may feel necessary in his particular situation.

I. *Required Courses (All Curricula)* 6

A.	Hum 500	Seminar in Humanities	2
B.	Mus 500	Methods and Materials of Research	2
C.	Edu 510	Seminar in Educational Foundations	2

THESIS PROGRAM (30 s. c.)

II. *Area of Specialization* 19-21

A. Required Courses:

Mus	510	Current Trends in Music Education 2
Section I Music Education (Select One)		2
Section II Applied Music		4
Section III and/or IV		4

B. Electives chosen under advisement 7-9
Sections I - V

III. *Research* 3-5

A.	Thesis	3
B.	Seminar or Supporting Electives	0-2

NON-THESIS PROGRAM (34 s. c.)

II. *Area of Specialization* 26-27

A. Required Courses
As in THESIS PROGRAM 12

B. Electives chosen under advisement 14-15
Sections I - V

III. *Research* 1-2
Mus 588-589 Research Seminar, and Research Report

Elective Courses for Music Students

SECTION I. MUSIC EDUCATION			*Semester Credits*
Mus	511	Administration of Public School Music	2
Mus	512	Music Education in the Secondary School	2
Mus	513	Music Education in the Elementary School	2
Mus	514	Pedagogy of Music Theory	2
Mus	515	Marching Band Techniques and Materials	2
Mus	516	Piano Pedagogy	2
Mus	518	Vocal Pedagogy	2
Mus	519	Music Appreciation in the General Music Program	2
Mus	584	Seminar in Piano Teaching and Teaching Materials	2
Mus	585	String Literature and Pedagogy	2

SECTION II. APPLIED MUSIC

A. KEYBOARD:

Mus	541-545	Advanced Piano or Organ	1 or 2
Mus	546-9	Piano Ensemble and Master Class	1-2
Mus	581	Accompanying	2

B. VOCAL:

Mus	503	Advanced Choral Conducting	2
Mus	531-535	Advanced Voice	1 or 2
Mus	536-537	Vocal Ensemble and/or Chorus	1
Mus	538-539	Opera Workshop	2
Mus	586-7	Vocal Diction	2

C. INSTRUMENTAL:

Mus	501-502	Advanced Class Instruction in Instruments	1
Mus	504	Advanced Instrumental Conducting	2
Mus	561-565	Advanced Instruments	1 or 2
Mus	566-569	Ensemble and/or Orchestra or Band	1

SECTION III. STRUCTURE AND ORGANIZATION OF MUSIC

Mus	521	Sixteenth Century Counterpoint	2
Mus	522	Advanced Composition and/or Orchestration	2
Mus	523	Advanced Band Arranging	2
Mus	528	Twentieth Century Music Styles	2
Mus	582	Advanced Musical Form	2

SECTION IV. LITERATURE AND HISTORY OF MUSIC

Mus	505	Contemporary Music	2
Mus	506	Instrumental Literature	2
Mus	507	Vocal Literature	2
Mus	508	Choral Literature	2
Mus	509	Piano Literature	2
Mus	525	Woodwind Literature	2
Mus	526	Brass Literature	2
Mus	527	History of the Opera	2
Mus	583	Music in the Baroque Period	2
Mus	591	Music in the Romantic Era	2

Elective Courses for All Students

SECTION V.

Mus	520	Instrument (Individual Lessons)	1
Mus	530	Voice (Individual Lessons)	1
Mus	540	Piano (Individual Lessons)	1
Mus	550	Organ (Individual Lessons)	1
Mus	560	Study and Appreciation of the Opera	2
Mus	571	Music Criticism and Aesthetics	2
Mus	590	Study and Appreciation of the Symphony	2

Elective Courses for Elementary Education Students

			Semester Credits
Mus	572	Vitalizing Music in the Elementary Grades	2
Mus	573	Keyboard Activities for the Classroom Teacher	2
Mus	574	Teaching of Music Appreciation in the Elementary Grades	2

PHYSICAL SCIENCE

NON-THESIS PROGRAM ONLY (34 s.c.)

			Semester Credits
I.	*General Education*		2-4
	Required		2
	Hum 500	Humanities	2
	Free Elective		0-2
	General Education Course (under advisement)		
II.	*Professional Education*		6-8
	Required		4
	Edu 510	Educational Foundations	2
	Res 500	Methods and Materials of Research	2
	Elective		
	PSc 502	Modern Techniques in Physical Science Teaching	2
	Professional Education General and Specialized (under advisement)		0-2
III.	*Area of Concentration*		22-26
	A. Distributed Electives in Physical Science		9
	One course must be taken from each of the three groups unless the candidate is exempt from one or more by virtue of his previous preparation and experience.		
	Group I — Chemistry		
	Che 502	Modern Trends in Chemistry Teaching	3
	Che 521	Advanced Analytical Chemistry	3
	Che 541	Selected Topics in Physical Chemistry	3
	Group II — Earth and Space Science		
	PSc 501	Historical Geology	3
	PSc 503	Principles of Physical Geology	3
	PSc 521	Minerology for the Science Teacher	3
	PSc 532	Space Science	3
	PSc 560	Workshop in Rocks and Minerals	3
	PSc 562	General Geological Field Studies of Southeastern Pennsylvania	3
	Group III — Physics		
	PSc 510	Electronics for Teachers	3
	PSc 511	Electricity for Teachers	3
	PSc 512	Mechanics for Teachers	3
	PSc 513	Modern Physics for Teachers	3
	PSc 524	Experimental Physics	1-3
	Other Electives — open to students with the appropriate pre-requisites		
	PSc 507	Recent Advances in Physical Science	3
	PSc 508	Nuclear Physics for Teachers	3
	Any Chemistry or Physics course may be elected under advisement.		
	B. Electives under advisement		13-17
IV.	*Research*		0-2
	A. PSc 506	Seminar in Physical Science	0-2

PHYSICS*

Semester Credits

I. *General Education* 2-4

A. Required 2
Hum 500 Humanities 2

B. Free Elective 0-2
General Education (under advisement)

II. *Professional Education* 6-8

A. Required 4
Edu 510 Educational Foundations 2
Res 500 Methods and Materials of Research 2

B. Electives 2-4
Phy 505 Modern Trends in Physics Teaching 2
Professional Education 2
(General and specialized under advisement) 0-2

THESIS PROGRAM (30 s.c.)

III. *Area of Concentration* 18-22

A. Required Courses in Major Field 12
Phy 501 Introduction to Theoretical Physics 3
Phy 506 Analytical Mechanics 3
Phy 513 Electromagnetic Theory I 3
Phy 531 Modern Physics 3

B. Elective Courses (under advisement) 3-5
Phy 532 Electromagnetic Theory II 3
Phy 533 Statistical Mechanics 3
Phy 541 Quantum Mechanics I 3
Phy 542 Quantum Mechanics II 3
Phy 551 Mathematical Physics 3
Phy 591 Seminar 1
Che 541 Special Topics in Physical Chemistry 3
PSc 590 History of the Physical Sciences 3

C. Research 3-5
A. Phy 591 Seminar
B. Phy 581 Thesis

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Concentration* 22-26

A. Required Courses in Major Field 15
Phy 501 Introduction to Theoretical Physics 3
Phy 506 Analytical Mechanics 3
Phy 513 Electromagnetic Theory I 3
Phy 531 Modern Physics 3
Phy 533 Statistical Mechanics 3

B. Elective Courses 7-11
Phy 532 Electromagnetic Theory II 3
Phy 541 Quantum Mechanics I 3
Phy 542 Quantum Mechanics II 3
Phy 551 Mathematical Physics 3
Phy 591 Seminar 1
Che 541 Special Topics in Physical Chemistry 3
PSc 590 History of the Physical Sciences 3

C. Research 0-2
A. Phy 591 Seminar 0-2
B. Research Report (no credit assigned) 0

*Depending upon Department of Public Instruction approval.

SOCIAL SCIENCE

The candidate for the Master's Degree with a major in social science must meet the requirements stated below.

Semester Credits

I. *General Education* 2-4

Required

Hum 500 Humanities 2

Electives

General Education Course 0-2
(under advisement)

II. *Professional Education* 6-8

Required 4

Ssc 500 Methods and Materials of Research in the Social Sciences 2

Edu 510 Educational Foundations 2

Electives (under advisement) 2-4

His 526 Workshop in World Cultures 2

Eco 533 Teaching Economics in the Secondary Schools 2

Ssc 502 Methods and Materials for Teaching Social Studies 2

Ssc 503 Teaching History in the Elementary Schools 1-2

OR

(Other selected courses from the Education Department)

THESIS PROGRAM (30 s.c.)

III. *Area of Specialization* 18-22

A. Required Courses

Group I: American History 6

Group II: European History 6

Group III: Social Sciences

A. Anthropology and Sociology 2

B. Economics 2

C. Political Science 2

B. Electives as advised 0-3

C. Research

Thesis 3

Seminar or Supporting Electives as advised 0-2

NON-THESIS PROGRAM (34 s.c.)

III. *Area of Specialization* 22-26

A. Required Courses

Group I: American History 6

Group II: European History 6

Group III: Social Sciences

A. Anthropology and Sociology 2

B. Economics 2

C. Political Science 2

B. Electives as advised 2-4

C. Research

Research Report 0-2

Seminar or Supporting Electives as advised 0-2

Group I: American History

Course Offerings:

His 510 Colonial and Revolutionary America: 1607-1783 2

His 511 Rise of the New Nation: 1783-1850 2

			Semester Credits
His	512	Civil War and Reconstruction: 1850-1876	2
His	513	Emergence of Modern America: 1876-1919	2
His	514	United States as a World Power: 1919-present	2
His	515	Problems in American Constitutional Development	3
His	516	Recent American Diplomatic History	2
His	550A	Seminar in American History	2

Group II: European History

His	530	Problems in Medieval Civilization	3
His	531	The Renaissance	2
His	532	The Protestant Revolution	2
His	533	Dynastic Europe: 1648-1789	2
His	534	The French Revolution and Napoleonic Era: 1789-1815	2
His	535	Nationalism and Democracy: 1815-1914	2
His	536	Europe Since 1914	2
His	540	The Evolution of Modern Russia	3
His	541	Tudor and Stuart England	2
His	550B	Seminar in European History	2

Group III: Social Sciences

A. Anthropology and Sociology

Ant	530	Problems in Anthropology	3
Ant	550	Seminar in Anthropology	2
Soc	531	Social Pathology	3
Soc	532	Historical Sociology	3
Soc	533	Intergroup Relations	3
Soc	550	Seminar in Sociology	2

B. Economics

Eco	530	Economics and Public Policy	3
Eco	531	Comparative Economic Systems	3
Eco	532	History of Economic Thought	3
Eco	550	Seminar in Economics	2

C. Political Science

Psc	531	Modern Political Theory	3
Psc	532	International Relations	3
Psc	533	The American Legislative Process	3
Psc	550	Seminar in Political Science	2

Group IV. Special Studies

Eco	533	Teaching Economics in Secondary Schools	2
His	523	Contemporary World Affairs	2
His	524	Cultures of the Non-Western World	3
His	526	Workshop in World Cultures	2
Ssc	500	Methods and Materials of Research in the Social Sciences	2
Ssc	502	Methods and Materials for Teaching Social Studies	2
Ssc	550	Seminar in Contemporary European Culture (Student European Tour)	6
Ssc	600	Research Report	2
Ssc	610	Thesis	3

IV. GENERAL INFORMATION

ABSENCES

Applicants for graduate courses should realize at the outset the importance of attending all classes. Because the Graduate Council realizes that emergencies may arise, however, a policy on absences has been constructed. Hardship cases will be considered individually.

For courses meeting once a week, the student is permitted a maximum of two absences during the semester. In no case should these absences be thought of as "cuts." They should be considered, rather, as allowances for emergency conditions.

No absences are permitted during the summer session.

The student is held fully responsible for all work required for courses taken. Absences from class, therefore, do not constitute a valid reason for exemption from course responsibilities. Students absent from examinations for valid reasons should confer with the professor concerned as early as possible in order to make up the examination.

ADVISORY SYSTEM

The applicant for admission to the graduate studies should think of the chairman of his department as his major advisor until such time as an advisor is assigned him. As soon as the applicant has declared his plans to the chairman of his major department, he will be assigned as the advisee of a professor in his major field. The student, aided by the advisor, will prepare a Program of Studies which outlines in detail the program he must complete in order to be eligible for the Master's Degree. Changes in the Program of Studies must be approved by the student's advisor. The initiative for seeking advisement and fulfilling degree requirements rests with the student.

CHANGING OF MAJOR CURRICULUM

The procedure for changing from one graduate program to another at West Chester State College is as follows:

1. A letter of request must be made to the Dean of Graduate Studies.
2. A letter of release must be obtained from the chairman of the department from which the student wishes to withdraw. This letter and the student's academic folder must be submitted by the chairman to the Graduate Office.
3. A letter from the chairman of the department in which the student is enrolling must be submitted to the Graduate Office by that chairman.

CLASS HOURS

All classes for the graduate program are scheduled during the late afternoon, evening, Saturdays, and summer sessions. As enrollment warrants, the number of classes given during the regular academic year is adjusted accordingly. Most graduate courses, however, are given primarily during the summer sessions.

CREDIT BY TRANSFER

West Chester State College will admit students from other accredited graduate schools to its graduate program provided they show evidence of good academic standing and can satisfy the College's admission requirements. Students who are admitted to the graduate program at West Chester State College and wish to take graduate work elsewhere for transfer credit must receive prior approval in order to assure that the transfer credit can be granted. In both of these cases, all transfer credits are subject to the following conditions:

1. The courses involved must be essentially the same as those offered at this institution.
2. The course grade must be at least B.
3. A maximum of six semester hours of graduate credit earned at another accredited institution will be accepted.
4. The credits must fall within the stipulated six-year time limit. All transfer credits accepted will be recorded on the student's record card during the student's last semester of graduate work at West Chester to assure that the transfer work does not fall outside the six-year limit.

It is not the policy to give graduate credit for courses taken on an extension or off-campus center. **(See Residence Requirements.)**

Students enrolled at other graduate schools who wish to take graduate courses at West Chester for transfer to their graduate program elsewhere must complete an application for admission to graduate classes. This must be accompanied by two official undergraduate transcripts. A letter of approval to take graduate work at West Chester should accompany the application to insure that the transfer of credit is accepted by the institution granting the degree.

CULTURAL OPPORTUNITIES

The graduate student should avail himself of the cultural opportunities on campus and in the immediate vicinity. The college sponsors All Star Programs, lectures, entertainment, and other significant cultural activities. The immediate vicinity is rich in historical significance and cultural advantages. Also, the student will find easy access to Philadelphia and its museums, libraries, and similar facilities.

EXAMINATIONS

As noted in the requirements for admission, examinations vary according to the classification of the student; e.g., degree candidates must pass specific comprehensive examinations. Every graduate student must accept responsibility for knowledge of the examinations required of him.

He should consult with his advisor, major field professor, or the Dean of Graduate Studies about the examination program.

All students working for a degree are required to take two examinations:

The Admission to Degree Candidacy Examination

The Area of Specialization Examination

In addition, however, some students will be required to take a general background examination.

An explanation of the examinations and the conditions under which they will be required follows:

1. *The Admission to Degree Candidacy Examination* — The Admission to Degree Candidacy Examination is administered by the Graduate Office and evaluated by the student's major department. This examination must be taken some time between the acquisition of six and fifteen semester credits. The examination is broad and comprehensive in nature involving the *Graduate Record Examination* made by the Educational Testing Service. This test has two major parts. The first part includes a broad general background examination; and secondly, the last part includes a test in the student's major field of concentration. (Audio-visual education, geography, guidance, and music majors will consult with their department chairmen concerning this second requirement.)

By action of the Graduate Council effective since June 1, 1963, all graduate students who file an application for Degree Candidacy at West Chester must take the Graduate Record Examinations. All tests must be taken after the student has taken six graduate credits and before he has accumulated sixteen credits. The student who applies for Degree Candidacy after he has accumulated fifteen credits will lose all credits over this maximum. It is advisable for all students to take these tests early in their program.

Application forms are available through the Graduate Office. Applications for any scheduled date must be on file at the Educational Testing Service Office, Box 995, Princeton, New Jersey, no later than fifteen days prior to the actual testing date. These tests are usually given in November, January, April, and July.

2. *The Area of Specialization Examination* — The graduate student in the thirty (30) credit (Thesis) Program must take the departmental comprehensive (oral and/or written) when he has taken from 24-30 credits of work. In the thirty-four (34) credit (Non-Thesis) Program the student must take the departmental comprehensive examination (oral and/or written) when he has taken from 28-34 credits of work.

The Area of Specialization Examination is a comprehensive examination over the student's major field. The examination is constructed, administered and evaluated by the student's major department. All details of the Area of Specialization Examination are the province of the major department concerned. The degree candidate is urged to confer with his advisor concerning this examination at the earliest possible date.

It is the responsibility of the degree candidate to make application to take this final examination through the chairman of the department concerned.

3. The student will also be required to take two examinations to be used for diagnostic purposes:

   The Professional Background Examination — The Professional Background Examination is constructed, administered and evaluated by the Department of Education. As the name implies, it is designed to evaluate the candidate's knowledge of the teaching profession. This examination is given in conjunction with the course entitled "Seminar in Educational Foundations."

   The General Culture Comprehensive Examination — Every student working for a degree must take as part of the course entitled "Seminar in Humanities" *The General Culture Comprehensive Examination.* This examination evaluates the student's background in those areas which are commonly termed the "humanities."

EXPENSES

The charge for tuition in the Graduate Program is $20 per semester hour of credit.

Graduate students desiring housing facilities at the college during the summer sessions may procure such facilities at the regular rates listed in the official undergraduate catalogue.

Graduate Students applying for admission for the first time must also pay a $10.00 application (processing) fee, which is non-refundable. Cashier's check or money order covering this fee is payable to the COMMONWEALTH OF PENNSYLVANIA.

All other fees are due and payable on the DAY DESIGNATED FOR REGISTRATION, after which the late fee is applicable.

Car registration is $1.00.

Identification Card is $1.00.

Graduate students are also required to pay any fees (activity fee, library fines, etc.) required of other summer school students.

All fees are subject to change without notice.

FINANCIAL AID

The following financial aid is available to graduate students:

1. National Defense Education Act Loans
   - A. Applications available in the office of the Dean of Student Affairs.
   - B. Requirements for obtaining loan include need, a C+ average, and three letters of recommendation.
   - C. The amount for which graduate students may apply is $1,000 per year, with the average loan about $400.00.
   - D. Re-payment Plans:
     - (1) Repaid after graduation.
     - (2) Loan principle reduced by 10% each year for a period of five years for those who teach. Total principle reduction will be 50%.
     - (3) Students who do not teach must repay entire loan and must start repayments after graduation.
     - (4) No interest due on loans until repayment starts.
2. Pennsylvania Higher Education Assistance Act Loans (State Loans)
   - A. Applications are available in most State banks.
   - B. Student may borrow $1,000 per academic year.
   - C. Student must be making satisfactory academic progress toward degree.
   - D. Repayment starts four months after graduation.
   - E. Interest, which should be between 5-6%, is paid on a quarterly basis from the time the loan is awarded.
3. Federal Work-Study Program
   - A. Applications and information are available in the office of Dr. Jack A. Owens, Dean of Student Affairs.
4. Graduate Assistantships

   A limited number of graduate assistantships are available each year. An applicant to be eligible must have had three years of successful teaching and/or have accumulated 15 hours of graduate credit at some accredited graduate school. The successful applicant will be expected to teach six hours of class work on the college level or assist in a laboratory. The applicant must enroll full time in the Graduate School at West Chester State College. The stipend is approximately $2,700, or two-fifths of an instructor's salary. For further information contact the Graduate Office.

HOUSING FACILITIES

Because this college infrequently has any full-time graduate students during the fall and spring semesters, no provisions for the housing of graduate students are made for those semesters. Graduate students attending the summer session may obtain housing in the college dormitories.

Graduate students living on campus during the summer sessions are subject to all officially stated regulations concerning housing and related matters.

LIBRARY

The Francis Harvey Green Library provides excellent facilities for graduate work. With a select collection of over 90,000 volumes, the library also subscribes to over 600 periodicals, with complete series available in either bound form or on microfilm.

To augment this collection, the library has on microfilm English Books Before 1640, which makes available books, pamphlets, and other materials in The Short Title Index, by Pollard and Redgraves. The American Cultural Series which includes 5,000 titles printed in America before 1875 is also available. The American Imprint Series, 1639-1800, is on microcards and contains all materials indexed in The American Bibliography, by Evans. The library also has an outstanding collection of juvenile, curriculum, and music books.

Materials in special collections are also available by appointment. Among these are the Chester County Collection of Scientific and Historical Books, the Normal Collection (a collection of historical books on physical education), and The Shakespeare Folios.

The librarians give special attention to graduate students in the procurement of needed materials. The library subscribes to the Philadelphia Union Catalogue; thus students benefit further through the inter-library loan service.

The library uses open-stacks, so that every student has access to the books. Books in the stacks circulate for two weeks; reserve books, one week, three days, or overnight only. Reference books and periodicals do not circulate. The West Chester Identification Card must be presented when borrowing books. Graduate students are subject to fines for overdue or lost books.

Library hours are as follows:

Monday—Thursday	7:55 a.m. — 10:00 p.m.
Friday	7:55 a.m. — 6:00 p.m.
Saturday	7:55 a.m. — 5:00 p.m.
Sunday	2:00 p.m. — 6:00 p.m.
College vacations	Closed

Sheet music, scores, and records are available in the Music Library in Swope Hall.

Monday—Thursday	7:45 a.m. — 2:00 p.m.
	5:00 p.m. — 7:00 p.m.
	(Closed 11:30 — 12 noon)
Friday	7:45 a.m. — 4:00 p.m.

MARKING SYSTEM

The marking system employed in the Graduate Program is as follows:

A — Superior
B — Above Average
C — Average
D — Passing
F — Failure
I — Incomplete

The following restrictions are enforced in the marking system:

1. The student must maintain an over-all average of at least 2.75. (A = 4.0.)
2. Grades lower than C are not acceptable in satisfying degree requirements.
3. Courses which, for some valid reason (unavoidable absence during final examination, etc.), are not completed by the end of a given semester must be completed before the close of the succeeding semester unless the Graduate Council grants an individual exception from this requirement.

Courses in which a student receives a grade of I (incomplete) must be completed before the final marking period of the following session unless an extension of time is granted by the Chairman of the Department involved, or the grade is recorded permanently as F (failure).

MUSIC FEES

Students in the music curriculum are subject to the schedule of fees listed below:

INSTRUCTION

Piano, Organ, Instrument or Voice
½ hour private lesson ..... $55.00 per semester

Instrument class or Ensemble
2 hours per week ..... $35.00 per semester

RENTALS

Any Band or Orchestra Instrument ..... $1.00 per week

PRACTICE TIME

Piano Room — 2 hours per day ..... $1.00 per week
(minimum charge — $3.00)

Organ Room — 2 hours per day ..... $1.50 per week
(minimum charge — $4.50)

Instrumental Room — 2 hours per day ..... $ .50 per week
(minimum charge — $1.50)

(NOTE: The lesson fees are in addition to the $20.00 semester hour credit fee.)

All fees are subject to change without notice.

OFFICE HOURS

The Graduate Office is located in Room 109 on the first floor of Anderson Hall. During the academic year, office hours are from 8:30 A.M. to 12:00 noon and from 1:00 P.M. to 5:00 P.M. daily, Monday through Friday. The office is open on the fourth Saturday morning of each month from 9:00 A.M. to 12:00 noon. Summer hours are from 8:00 A.M. to 12:00 noon and from 1:00 P.M. to 4:30 P.M.

PERMANENT CERTIFICATION

The Permanent College Certificate requires three years of successful teaching in the public schools of the Commonwealth of Pennsylvania under the Provisional College Certificate. Also required is the satisfactory com-

pletion of the needed number of semester hours of post-baccalaureate work. This number is determined by the following dates:

1. Provisional College Certificates issued after October 1, 1959, require for validation for the Permanent Certificate the completion of twelve semester hours.
2. Provisional College Certificates issued after October 1, 1963, require for the Permanent Certificate the completion of 24 semester hours including twelve semester hours in an academic content area, unless otherwise specified, and the remainder in general education, professional education, or subject matter specialization, or a combination of these.

All permanent Certificates will continue to require the basic course in the History of the United States and of Pennsylvania, as well as a basic course in visual aids and sensory techniques.

Courses taken to extend a College Provisional Certificate to include additional fields may be used to make the Certificate permanent.

Any student who completes the Graduate Program at West Chester State College in one of the foreign languages and receives the College's recommendation will be entitled to Permanent Certification provided the other requirements for such a Certificate have been met. The College hopes in the near future to have the right to grant Permanent Certification in all curricula approved.

PLACEMENT SERVICE

Every year the College Placement Service is notified of many positions of all types on all levels of instruction. Because many of these positions offer unusual opportunities for professional advancement, graduate students are encouraged to use the services of the Placement Office.

All students pursuing graduate work at West Chester are eligible for the use of limited services provided by the Placement Service. Students who have completed less than 15 semester credits have access to the listings of vacancies. Students who hold undergraduate degrees from West Chester and/or have completed 15 semester credits of graduate work are eligible for the full services of the Placement Service. The term "full service" includes registration, development of a complete set of credentials, and mailing of credentials to prospective employers.

There is no charge for the use of the Placement Service. Students wishing further information should visit the Placement Office. The office is open from 9:00 A.M. to 5:00 P.M. on weekdays and from 9:00 A.M. to 12 Noon on Saturdays.

RESEARCH REQUIREMENTS FOR THE DEGREE

The candidate for the Master's Degree at West Chester State College must satisfy the research requirement established by the Graduate Council. This requirement is that he must conduct an independent study related to his major field or specialization in the form of a Thesis or Research Report.

The study may be in the subject matter field or in professional education. A Thesis will carry three credits of graduate work in the 30-credit (Thesis) program. The Research Report will carry from one to two credits of graduate work applied to the 34-credit (Non-Thesis) program. (Consult the Department Chairmen for individual department requirements).

The decision to take the Thesis program or the Non-Thesis program is subject to the approval of the adviser who will consider the question on the basis of the student's needs and ability.

The conduct of a research study results in professional growth usually not attainable through other forms of study. The completed Thesis or Research Report indicates the student's ability to identify a research topic and to pursue research in his field of specialization. An acceptable Research Report should show evidence that the student:

1. Has made a comprehensive study of the literature in his field of specialization.
2. Has made an intensive and independent study of the problem.
3. Has a practical working knowledge of research procedures.
4. Has demonstrated his ability to write in a professional style.
5. Has reached justifiable conclusions from his research study.

DISTINCTION BETWEEN A RESEARCH REPORT AND THE THESIS

The Research Report must be aimed at developing the student professionally in his major field. While the Thesis must have the same basic aim, it is much more extensive and hence more demanding of the student's time and abilities.

The Graduate Council has defined the Research Report and the Thesis as follows:

> A **Research Report** is a written record of a scientific investigation to determine the facts of a condition; hence it is essentially a report on a problem. It demands of the researcher a knowledge of the techniques of research and scientific accuracy.
>
> A **Thesis** is the written account of an exhaustive research to support or refute a belief or a hypothesis. It differs from the Research Report in that it is more comprehensive and more generally demanding of the writer's knowledge, skills, and general powers of scholarship.

The student who plans to work eventually toward a degree should make his decision early regarding the Research Report or Thesis. In no case should he defer the matter until a late moment in his course because the work involved in the Research Report or Thesis will undoubtedly extend over two or more semesters.

In thinking of the Research Report or Thesis, the student should take special note of the statements listed below. These statements represent official policy of the Graduate Council regarding the Research Report or Thesis.

1. The student should register his decision to do a Research Report or the Thesis at the completion of the course entitled Methods and Materials of Research. Thus the student's later selection of courses will be affected in part by his decision regarding this matter.
2. The department concerned must approve the subject of the Research Report or Thesis as a challenging, soundly executed professional task, worthy of Master's level achievement.
3. A detailed outline of the Thesis must be approved by the Graduate Dean before the student is authorized to begin his investigation. This must be on file 30 days before final approval can be given.
4. The Thesis must be approved by the Department of English for language usage. The Department of English will serve as a reading committee only. In no case is the Department of English to be thought of as an editing committee.
5. When the Thesis has been approved by the Department, it must be typed and bound in accordance with specifications established

by the Graduate Council. These specifications are on file in the offices of the Department Chairmen. *The Form and Style in Thesis Writing*, by Campbell, must be used as a format.

6. The student who submits a Thesis in partial fulfillment of degree requirements must present three bound copies to the Division of Graduate Studies. These must be accompanied with three copies of the abstract (250-500 words). One copy of each will be retained by the Graduate Office and the remaining copies will be given to the college library and the major department.

REFUNDS

1. No portion of the tuition fee shall be refunded if the student has attended one-third or more than one-third of the class periods scheduled during a given semester or session.
2. If a student withdraws from a course, for approved reasons, before one-third of the scheduled class periods have been completed, the student shall then be entitled to a refund of one-half of the tuition fees paid.
3. Refunds will not be made to students who are suspended or dismissed or to students who drop courses without the approval of the Dean of Graduate Studies.
4. If a student withdraws completely from courses for which he registered without attending any classes, he will receive a refund of all but $10.
5. If a student enrolls for two or more classes, and drops one (or not all his classes) and does not attend the course from which he wishes to withdraw he will receive a full refund.

REPORTS

Official reports are issued immediately after the termination of each semester for work taken during that semester. The student should consider these reports as an official record of his standing in the graduate program and should check these reports against grade requirements and other regulations. When consulting with faculty advisors, the student should have these reports at hand.

RESIDENCE REQUIREMENTS

All courses given by the Division of Graduate Studies are taught on this campus by members of the Graduate Studies faculty. Therefore, students in this graduate program should not expect to take off-campus or extension courses.

This college will accept in transfer only courses taken in residence at other approved graduate schools or courses taught by regular members of the full-time faculty of other approved graduate schools at off-campus centers.

ROOM CODES

Numbers with no prefix	Anderson Hall
Numbers with prefix "R"	Recitation Hall
" " " "S"	Swope Hall
" " " "M"	Main Dormitory
" " " "C"	Schmucker Hall
" " " "D"	Demonstration School
SEB	Special Education Building

SEB-C	Special Education Building (Conference Room)
CCR	Conference Class Room (Field House)
EHG	Ehinger Gymnasium
PBR	Ballroom, Philips Memorial Building
PLB	Library, Philips Memorial Building
PAud	Auditorium, Philips Memorial Building
KH	Men's Dormitory
NDH	New Dining Hall

STUDENT LOAD

During summer session, the normal program of a graduate student consists of one semester hour of work for each week of the summer term.

During the college year, a regularly employed teacher may register for not more than six semester hours of courses during a semester unless his schedule is approved by the Director of Graduate Studies.

A full-time graduate student may take from 9-12 semester credits of work, providing he has the approval of the department chairman to do so.

SUMMER SESSIONS

The twelve-week summer session is divided into three periods: the Pre Session of three weeks, the Regular Session of six weeks, and the Post Session of three weeks. Credit may be earned at the rate of one semester hour per week of work.

All prospective summer session students **must** fill out a **Pre-Registration Form** giving the information requested as well as the courses they wish to take during any one of the sessions. A Pre-Registration card must be completed for each of the summer session periods (Regular, Pre and Post) and is to be returned to Dr. Willard J. Trezise, Dean of Graduate Studies, West Chester State College, West Chester, Pennsylvania 19380.

Pre-Registration for these three summer periods will terminate the Wednesday prior to the General Registration and Payment dates. Any student who fails to pre-register by the deadlines indicated will be subject to a late fee. In addition, there will be a change of course fee on registration day for the student who desires to make a change of course after having pre-registered. Therefore, to avoid the change of course fee, all changes must be made prior to the aforementioned three deadlines. ALL SUMMER SESSION FEES ARE DUE AND PAYABLE ON THE GENERAL REGISTRATION DATES. ALL FEES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Various expenses and fees are included in the following information: Room and board at the college is $17 per week. The activity fee for the Regular Session is $3.50; for the Pre and Post Sessions, $1.75 each. The charge for courses is $20 per semester hour of credit. Graduate students planning to use the college parking facilities must obtain a college car decal at a cost of fifty cents for the Summer Session.

An Identification Card is required of all graduate students. The college library, and college, university, and public libraries within the area, have been requested not to extend library privileges to West Chester graduate students until they present their I.D. card. The cost of the card is $1 and the card is in effect as long as the student is active in the Graduate Program, up to a period of six years.

For further information regarding expenses, consult the special catalogue issued by the Graduate Office each summer.

SUSPENSION OF CLASSES BECAUSE OF THE WEATHER

The official calendar for the Graduate Program lists the class meeting dates for each session. This calendar is distributed to faculty and posted on the official bulletin boards every semester.

All classes meet on these days, regardless of weather conditions. This policy has been instituted, however, with the understanding that students need not take undue risks in order to travel.

Students absent because of weather conditions must assume responsibility for all work missed.

TIME LIMIT

All requirements including transfer of credits for the graduate degree, i.e., Master of Education, must have been satisfied within a period of six years before the actual date of receiving the degree. In unusual cases, eg., prolonged illness, the Graduate Council may make minor exceptions. In no instance, however, should the student assume that such exceptions will be made routinely.

The existence of the six-year limit makes it imperative to settle, at the earliest possible date, details regarding the research report or thesis and similar matters.

TRANSCRIPTS

Students wishing transcripts of graduate work at West Chester may obtain such transcripts by communicating directly with the Office of the Registrar. The regulations pertaining to undergraduate transcripts hold for the graduate program also, i.e., students should allow a minimum of one week in requesting transcripts; requests should be made in writing; and all pertinent information (full name, maiden name, curriculum, dates, etc.) should be given.

The cost is $1 per transcript. Checks or money orders should be made payable to the Commonwealth of Pennsylvania. Cash is not acceptable.

WITHDRAWAL FROM COURSES

If a student wishes to withdraw from a course, he should do the following:

1. He must file a withdrawal form in the Graduate Office. These forms are available in that office.
2. He must file a written form prior to the sixth meeting of the class. Otherwise, his record card will show a W.P. (withdrawing passing) or W.F. (withdrawing failing).
3. All changes from credit to audit must be done prior to the sixth meeting of the class to be valid.

All withdrawals are subject to the rules established for refunds. Refer to that section of the bulletin.

Any student withdrawing from a class without official authorization is automatically disqualified from the Graduate Program. He can be admitted to further graduate study only through application to the Graduate Council.

V. COURSE OFFERINGS

COURSE OFFERINGS

ALL CURRICULA

Semester Credits

Hum 500 *Humanities* 2

This is a composite course composed of three major fields of subject matter: 1. Art and Architecture, 2. Music, 3. Literature. This material is closely correlated to show the relationship of the three fields to each other and to the central theme of a general philosophy connecting these fields of life. The professors teaching this course develop specific material in concert to establish an over-all unity.
Prerequisite: Res 500.

Edu 510 *Educational Foundations* 2

The history of education; factual history integrated with educational philosophy and thought; the evolution of present-day educational theory and issues from early times.

Res 500 *Methods and Materials of Research* 2

A course designed to acquaint the student with the basic techniques and procedures in research. This course treats the major types of research and the methods for locating, evaluating, and interpreting evidence. It also includes the actual preparation of a research paper. It is given by curriculum, to meet the needs of the specific fields. In some cases (as indicated below) the course has been assigned a symbol pertaining to the field. In other cases, the symbol remains Res 500.

A. Elem Edu 500 *Methods and Materials of Research*
B. Sec Edu 500 *Methods and Materials of Research*
C. HEd 500 *Methods and Materials of Research*
D. Mat 500 *Methods and Materials of Research*
E. Mus 500 *Methods and Materials of Research*
F. Ssc 500 *Methods and Materials of Research*
G. Lan 500 *Methods and Materials of Research*

AUDIO-VISUAL EDUCATION*

Edu 500 *Methods and Materials of Research* 2

A course designed to acquaint the student with the basic techniques and procedures in research; this course treats the major types of research and the methods for locating, evaluating, and interpreting evidence. It also includes the actual preparation of a research paper.

Edu 510 *Seminar in Educational Foundations* 2

The history of education; factual history integrated with educational philosophy and thought; the evolution of present-day educational theory and issues from early times.

* Depending upon Department of Public Instruction approval.

Semester Credits

Edu 502 *Secondary School Curriculum* 2

A survey of current practices and trends in reorganizing and reorienting the secondary school curriculum, with emphasis on the various integrating techniques. Particular attention will be given to the critical analysis and evaluation of the experimental results of such practices. Specific application will be made to each of the major subject matter areas.

Edu 517 *Curriculum Problems in Elementary Education* 2

Examination of current trends and basic problems in the elementary school curriculum; practical, creative projects and investigations dealing with actual teaching situations.
Prerequisites: Edu 500, Edu 510, undergraduate major in elementary education, or all required courses under B, Area of Specialization.

Edu 526 *Programmed Instruction* 2

A workshop-type course designed to give experience in program writing. The course will include instruction in learning theory, programming techniques, program writing, and will also include the analysis and evaluation of existing programs.
Prerequisite: a course in Education Psychology.

Edu 527 *Audio-Visual Materials in the Elementary School* 2

Practice in techniques of using and evaluating the modern communications media in the classroom; correlation of audio-visual materials and techniques with the modern elementary school.

Edu 528 *Production of Projected Still Materials* 3

This course deals with the various techniques for producing materials for use on the overhead, opaque, and slide projectors.

Edu 529 *Production of Non-Projected Materials* 3

Techniques in the production and use of such teacher-prepared devices as bulletin boards, flannel boards, magnetic boards, flip charts, etc.

Edu 530 *Selection and Effective Utilization of Instructional Materials* 3

Concerns the approved methods of selecting audio-visual materials for maximum value to the curriculum as well as principles applied to efficient use of each of the major types of materials.

Edu 532 *Photography for Teachers* 3

Theories and practice in the field of still photography with particular emphasis on the production of photographic transparencies, including Polaroid photography. One unit deals with the production of motion pictures.

Edu 533 *Television in Education* 3

The nature of television and the educational use of commercial, educational, and closed-circuit television in the classroom.

Edu 534 *Seminar in Instructional Materials* 2

A workshop-type course probing the problems, techniques, and advantages in the use of various instructional media such as community resources, free and inexpensive materials, etc.

Edu 535 *Organization and Administration of the Audio-Visual Program* 2

Includes a study and analysis of the function of the school's education program. The selection and evaluation of materials and equipment, unit costs, problems of developing and maintaining an efficient operation.

Semester Credits

Edu 550 *Advanced Educational Psychology* 3

Intensive study of the processes by which skills, understandings, concepts, and ideals are acquired; examination of teaching practices in relation to basic research in learning theories.
Prerequisite: A course in Educational Psychology or its equivalent.

Edu 580 *History, Philosophy, and Psychology of Audio-Visual Education* 2

The historical background, underlying philosophies, and psychological foundations for the use of audio-visual materials in the field of mass communication.

Edu 581 *The Motion Picture in Education* 2

This course traces the development of motion pictures and examines the unique contributions of cine-photography. Various techniques of production are analyzed and evaluated. Adequate time for preview and evaluation is provided.

Edu 582 *Seminar in Research Communications* 2

The basic elements of communication theory are discussed and applied to audio-visual communication education. Research in Audio-Visual communication is analyzed and discussed.

Edu 583 *Audio-Visual Materials in the Secondary School* 2

This course examines the use of instructional materials in the present-day secondary school; further, an investigation is made of the role of audio-visual materials in the expanding area of subject matter to be taught in the secondary schools of the future with respect to the contributions of these mass media relevant to proposed organizational, philosophical, and pedagogical changes.

Edu 584 *Teaching Machines and Programmed Learning* 2

Reviews the history of technological contributions to American education. Examines current developments as sources of an emerging area of professional concern. The nature of auto-instruction is examined.

Edu 585 *Library Science* 2

A course providing essential information in the organization and administration of school libraries. It covers necessary services of the school library, and criteria and procedures for classifying and cataloging instructional materials, both of books and other materials of which the library may serve as the center.

BIOLOGY

Bio 501 *Introductory Biochemistry for Teachers* 3

An elementary course in biochemistry designed to provide a background for the teaching of biology courses in the high school. The topics under discussion will include elements of organic chemistry, solutions, buffers, enzyme action, and the structure and metabolism of biological compounds. Some illustrative laboratory exercises will be undertaken.

Prerequisites: Two semesters of undergraduate biology plus laboratory experience. Some knowledge of inorganic and organic chemistry is desirable but not essential. Spring 1966. Regular Summer Session 1967 and every Regular Summer Session thereafter.

Semester Credits

Bio 503 *Modern Techniques of Teaching Biology* 2

A course designed to acquaint teachers with recent methodological approaches in the teaching of biology. Instructional techniques are presented which are intended to reflect changes in emphasis placed on the various levels of biological organization. Preparation for and presentation of laboratory experience will be stressed.

Bio 511 *Systematic Botany* 3

Scientific methods applied to the classification of leafy and flowering plants. Observation of living specimens in the field, woods and gardens will be supplemented by lectures and herbarium work. Various systems of historical importance will be reviewed. The modern approach to experimental taxonomy will be emphasized.
Prerequisite: General college botany or basic biology and field botany.

Bio 512 *Plant Growth and Development* 3

A comprehensive study of the factors controlling plant growth and development is considered against a background of plant physiology. Topics covered include the formation of zygote, development of embryo and plant tissues, development of reproductive structures, plant growth regulators, and the influence of environmental factors on plant growth.

Prerequisites: Two semesters of college botany, general chemistry, or the permission of the professor. Regular Summer Session 1966 and alternate Summers.

Bio 514 *Plant Pests and Diseases* 3

The nature of parasitism and pathogenic activity of organisms which produce infectious diseases of turf, agricultural crops, ornamental plantings, and flowers are studied, using specific organisms as examples. Diagnosis of plant diseases, isolation of pathogenic organisms, and modern methods of control are stressed.

Prerequisites: Two semesters of college botany, Mycology I, Plant Growth and Development, or the permission of the professor. Regular Summer Session 1967 and alternate summers.

Bio 516 *Physiology of Plants* 3

A comprehensive study of the physiological aspects of plants and plant cells is stressed. Topics covered include anabolic and catabolic metabolism, enzyme catalysis, membrane phenomena, mineral nutrition, water metabolism, the translocation of solutes, and the action of plant growth regulators.

Prerequisites: Two semesters of college botany, general, organic, and bio-chemistry, Experimental Biology I, or the permission of the professor. Fall 1967 and alternate years.

Bio 517 *Advanced Plant Anatomy and Morphology* 3

A detailed examination of the macroscopic and microscopic structure of plants and plant parts is undertaken. Topics of study include theories of the development of plant tissue, cell differentiation, meristematic activity, formation and anatomy of reproductive structures, types of vascular steles, the primary body, secondary body, and anomalous growth, plant embryo development, and fruit development.

Prerequisites: Two semesters of college botany, Biology 512, or the permission of the professor. Fall 1966 and alternate years.

Semester Credits

Bio 522 *Ecology for Teachers* 3

Four basic ecosystems will be studied in the field, and the principles of ecology applied to them. The ecosystems studied will be the aquatic, the forest, the field, and the urban. As well as sampling methods and interpretation, the course will include the study of common plants and animals, the soil and some geology. Each student will be given the opportunity for individual investigation.
Prerequisites: Two semesters of undergraduate biology including laboratory experience. Spring of 1966 and every even Spring.

Bio 523 *Resource Material in Elementary Science* 3

A course designed to acquaint the elementary school teacher with the resource material in his community and elsewhere that is essential to the curriculum of the modern elementary school. Although this course is designed primarily for elementary school teachers, it should prove profitable to administrators also.

Bio 524 *Experimental Biology I* 3

Techniques in demonstrating body functions and animal behavior. Humanely conducted operations will utilize several types of invertebrates as well as fish, frogs and rodents. These are designed to demonstrate reflexes, tropistic responses, enzymatic digestion, peristaltic movements, circulation of the blood, metabolism, normal and anomalous growth.
Prerequisite: Completion of a major field in biological science.

Bio 525 *Experimental Physiology for Teachers* 3

A study of the fundamental physiological processes such as nutrition, respiration, excretion, growth, reproduction, and general response to changes in environment as is seen in microscopic animals and plants.
Prerequisite: Zoology I and Botany II, or a general course in Biology.

Bio 526 *Biochemistry I and II* 3 or 6

A presentation of the biochemical changes in the organism. The use of modern techniques to determine the properties of protoplasm. A consideration of acid-base balance, Donnan equilibrium, Homeostasis, the function of carbohydrates, proteins, fats in tissues and intermediary metabolism, and the nature of enzymes. A study of digestion, the role of vitamins, nutrition, energy metabolism, the chemical composition of blood, hormones, chemical structure in relation to biological phenomenon and the problem of biochemical antagonism and detoxication mechanisms.
Prerequisites: Two semesters of college chemistry, two semesters of organic chemistry and undergraduate specialization in Biology.

Bio 530 *Genetic Theory* 3

Studies in the theory of mutation of genes, chromosomal mappings, chromosomal abnormalities, the principles of dominance and recessiveness multiple factors, lethal factors and their association with visibles. The nature of D.N.A. explored.
Prerequisite: Basic Biology or Zoology I and II or Botany I and II.

Bio 532 *Experimental Genetics* 3

Consideration of inheritance from the point of view of cellular biology with modern concepts of the structure and chemistry of chromosomes and the nature of the genes. Experimental work in the production of mutations in germ cells and in somatic and the effects of radiations upon tissues.
Prerequisite: Bio 530, Genetic Theory.

Semester Credits

Bio 533 *Advanced Embryology I and II* 3-6

A comprehensive course tracing the maturation of gametes, fertilization, cleavage, differentiation, organogenesis, and development in the vertebrates. Major emphasis will be placed on such phenomena in the chick, with correlative work on the frog and pig.
Prerequisites: Zoology I, II, Comparative Anatomy is desirable.

Bio 538 *Systematic Zoology* 3

Principles and procedures governing the classification of animals. A consideration of the morphological, physiological, ecological, and ethological characters employed as the bases for establishing taxonomic position. Emphasis is placed on the type method and its significance. Students are expected to become familiar with the International Code of Zoological Nomenclature, and to develop skill in interpreting the derivation of zoological names.

Bio 539 *Insect Morphology* 3

A study of the internal and external structures of typical insects from laboratory dissections of specimens, and the relationship of the functions of these structures to the life history of the insect.
Prerequisite: General Entomology.

Bio 540 *Applied Ecology* 3

Field trips, literature surveys, and class discussion will be used to demonstrate how the principles of ecology are applied in the practice of resource management in such areas as forestry, wildlife, and agriculture.
Prerequisite: Bio 522 or equivalent basic course in ecology. 1966 Regular Summer Session and every even Regular Summer Session.

Bio 541 *Economic Entomology* 3

Beneficial and deleterious influences exerted by insects upon man's welfare; their identification, distribution, life histories and control. Special attention will be devoted to insects attacking crop plants, stored products, and livestock. Further study will be devoted to pollinating insects as well as the predaceous and parasitic forms utilized in biological control of organisms.
Prerequisite: Completion of a field in biological science including general entomology or invertebrate zoology and college botany courses.

Bio 542 *Animal Ecology* 3

Interrelationships of organisms and the environment including physical and biological factors. Topics for discussion and investigation will include animal distribution, procuring food, escape from enemies, surviving climatic extremes, reproductions and community organizations. Field trips to study a variety of terrestrial and freshwater habitats will be required.
Prerequisite: Two semesters of college zoology or general biology.

Bio 543 *Freshwater Biology* 3

Habitats, morphology and taxonomy of our local freshwater plants and animals. Work in the course will include classroom lectures and dissection, field trips and a minor problem. Each student must present at a seminar meeting a complete report of some individual research project.
Prerequisite: College zoology, college botany, and at least one field course in biology.

Semester Credits

Bio 545 *Developmental Anatomy* 3

A review of the anatomy of the human reproductive systems and the fundamentals of human development. Students make a survey of current literature dealing with the origin of sperms and ova and the sexual cycles. The establishment of several functional systems of the human body is studied, with constant reference to those in chicks and monkeys. A term paper is required which shall be presented to the class group.
Prerequisite: Anatomy, physiology and embryology courses.

Bio 547 *Laboratory Techniques* 3

A course designed to acquaint the student with the procedures involved in the production of microscope slides. Techniques of preparing whole mounts, microtome sections and serial sections will be covered. Both plant and animal materials will be used.
Prerequisites: Botany I, II, Zoology I, II.

Bio 561 *Human Heredity* 3

The in-born qualities of human beings and their genetic basis. This subject deals with both physical and mental aspects, normal and sub-normal, including such topics as linkage, crossing-over, mutations, nature of the genes, multiple alleles, multiple genes, incomplete dominance, lethal genes, relationship to heredity and environment, and effects of radio-active substances.
Prerequisite: A course in general genetics or two semesters of a biological science.

Bio 571 *Advanced Bacteriology* 3

Diagnostic procedures and minor problems in microbiology, immunology and immunochemistry. The fields of medical mycology, virology and use of antibiotics will be examined.
Prerequisite: Completion of a field in science, including two semesters of chemistry and an undergraduate course in bacteriology or microbiology.

Bio 575 *Mycology I: Morphology of Fungi* 3

A study of the form and structure of fungi is considered against a background of fungal taxonomy. Specific organisms are studied in detail as examples of important morphological, anatomical, and reproductive features of the various classes of fungi.
Prerequisites: Two semesters of college botany, or the permission of the professor. Spring 1967 and alternate years.

Bio 576 *Mycology II: Physiology of Fungi* 3

A detailed investigation of the physiological activities of fungi is considered. Topics of study include intermediate metabolism, the nature of parasitism, environmental requirements for growth, sporulation, and spore germination, sexual and asexual reproduction, and the importance to man of the physiology of fungi.
Prerequisites: Two semesters of college botany, general, organic, and biochemistry, Experimental Biology I, Physiology of Plants, or the permission of the professor. Spring 1966 and alternate years.

Bio 591 *History of Biology* 3

Great discoveries in the field of biology and related literature from that of Theophrastus to the present should be evaluated. Emphasis will be placed on the philosophical implications of these discoveries and the economic changes which have resulted from the major discoveries.
Prerequisites: College zoology, college botany and a field of at least 24 semester hours in science.

Semester Credits

Bio 595 *Elementary Science Curriculum and Instruction* 3
Methods and materials used in teaching science in elementary grades; demonstration experiments adapted to elementary classroom work; curriculum planning; recent research and its application; field trips.

Bio 599 *Research Seminar* 2
The analysis and writing of the research report. This seminar is required of all students who do not elect to write a thesis.

Bio 600 *Research Report* 0-2

Bio 610 *Thesis* 3

CHEMISTRY*

Che 501 *History and Philosophy of Chemistry* 2
The development of chemical theories; the ancient and modern chemical industries; the rise of the experimental method; the impact of great chemical discoveries on industries and nations.

Che 502 *Modern Trends in Teaching Chemistry* 2
The modern techniques of teaching the fundamental theories and laws of chemistry will be studied and demonstrated through the use of audio-visual equipment, laboratory demonstrations, and atomic and molecular models. Understanding of modern research methods will be approached through instrumental techniques that have been of scientific success in many phases of scientific endeavor in recent years.

Che 511 *Advanced Inorganic Chemistry* 3
Theoretical treatment of the properties and structure of the elements and their compounds; descriptive study of the elements in their periodic table based on horizontal, vertical, and diagonal relationships.

Che 513 *Chemistry of the Less Common Elements* 2
A study of the properties of the less common elements approached from their structure and position in the periodic table; analytical detection and metallurgical aspects are included.

Che 515 *Inorganic Preparations* 2
A laboratory course in the synthesis of inorganic materials, involving modern techniques.
Prerequisite: Permission of instructor.

Che 521 *Advanced Analytical Chemistry* 3
Modern techniques of quantitative analysis with emphasis on the instrumental methods; largely a laboratory course.

Che 523 *Industrial Chemistry Processes* 3
This course studies the various unit processes and how they are applied to the manufacture of chemicals and some industrial products. It also explores the multiple use of equipment involved in various unit processes of the chemical industry, and studies the industry's use of instrumentation and control. The significance of chemical research to the processes and economy of industry is examined.

*Depending upon Department of Public Instruction approval.

Semester Credits

Che 531 *Advanced Organic Chemistry* 3
Advanced treatment of synthesis and properties of organic compounds approached from the mechanist point of view.

Che 533 *Physical Organic Chemistry* 3
Bonding and spectra of organic molecules; theoretical treatment of important equilibria in organic reactions, e.g. linear free energy relationships; kinetics and mechanisms of organic reactions.

Che 535 *Qualitative Organic Analysis* 3
A laboratory course devoted to the identification of both pure organic compounds and mixtures of organic compounds using classical and modern instrumental techniques.

Che 538 *Organic Preparations* 2
Some recent techniques in organic synthesis will be attempted and students will be encouraged to exercise their own judgment in working out procedures.
Prerequisite: Che 531

Che 541 *Selected Topics in Physical Chemistry* 3
A course designed for students who have had only one semester of under-graduate physical chemistry. The topics to be covered will depend largely on the needs of the students, but will most likely include chemical thermodynamics, chemical kinetics, electrochemistry, and chemical equilibrium.

Che 543 *Theory of Valence* 2
Valence bond and molecular orbital theories of bonding; elementary wave mechanics; metallic bonding.

Che 545 *Chemical Thermodynamics* 2
The fundamental laws and functions of thermodynamics and the principles of their applications to chemistry; introduction to statistical thermodynamics.
Prerequisite: Che 541 or its equivalent.

Che 551 *Chemistry of Coordination Compounds* 3
The study of the principles involved in complex formation; i.e. application of the crystal field theory, various kinds of complexing agents and the chemical implications of coordinated compounds.
Prerequisite: Che 511.

Che 561 *Nuclear and Radio Chemistry* 2
An introduction to the study of nuclear reactions, emission of various particles, and radio chemical applications.
Prerequisite: Che 511.

Che 563 Electrochemistry 3
Study of the principles of electrochemical systems and Galvanic cells; particularly electrolytic applications in instrumentations and research.
Prerequisite: Che 511.

Che 581 *Research* 1-2
Individual reading, conferences, and research on problems in contemporary chemistry.
Prerequisite: Permission of department.

Semester Credits

Che 591 *Seminar* 1-2
Presentation of written and oral reports on topics of current interest in chemistry.
Prerequisite: Permission of department.

Che 610 *Thesis* 3

EDUCATION

(A course in the foundations of education, or its equivalent, is prerequisite to all courses.)

Edu 502 *Secondary School Curriculum* 2
A survey of current practices and trends in reorganizing and re-orienting the secondary school curriculum, with emphasis on the various integrating techniques. Attention is given to understanding curriculum development and best procedures for accomplishing this development. Each of the major academic areas taught will be studied.

Edu 506 *The Junior High School* 2
The development, function, and philosophy of the early years of secondary school. A study of the curriculum, teaching assignments, characteristics of pupils, and special problems of the junior high school.
Prerequisite: A course in Adolescent Development or its equivalent.

Edu 508 *The Core Curriculum* 2
The theory and philosophy underlying the core curriculum. A study of specific school core programs in secondary schools will be studied and evaluated.

Edu 509 *Contemporary Teaching Trends* 2
A study of the newer trends of teaching in the elementary and secondary school with respect to effective adaptation of these newer practices to the curriculum. Such areas as team-teaching, programmed instruction, and various media of communication will be evaluated.

Edu 510 *Educational Foundations* 2
The history of education; factual history integrated with educational philosophy and thought; the evolution of present day educational theories and issues from early times. This is a required course for all curricula, and should be taken early in the program.

Edu 520 *Comparative Education* 3
Major problems of education in a number of foreign countries in relation to similar problems in the United States. Attention is given to the reasons for the various patterns of education in terms of purposes and philosophies as they pertain to differences in organization and administration.

Edu 525 *The Teacher and Administrative Leadership* 2
A study of processes and methods of local leadership and participation by the classroom teacher, including an understanding of human relations. The relationship between the classroom teacher and other school personnel.

Semester Credits

Edu 526 *Programmed Instruction* 2

A workshop type course that will stress program writing. The course will cover the history and psychology of programmed instruction, recent trends in the field, program evaluation, and programming techniques.
Prerequisite: General Psychology and a recent basic A-V course.

Edu 528 *The Production of Projected Still Materials* 3

This production course explores the area of handmade projection materials which can be teacher-made. The major part of this course deals with techniques for producing projectuals for the overhead projector. Special attention is given to the design, lettering, production, and evaluation of diazo type transparencies.

Edu 529 *The Production of Non-Projected Materials* 3

This course explores the area of teacher-made instructional materials. Techniques of design, lettering, enhancing, mounting, projecting, and evaluating the areas of graphics and flat pictures are taken up. Methods of displaying, including flannel boards, bulletin boards, peg boards, etc., are explored and evaluated. Teacher-made 3-D materials are also explored.

Edu 530 *Selection and Effective Utilization of Instructional Materials* 3

Considers the nature of the communication process as it applies to education. Factors which affect the selection of instructional materials and techniques are taken up. Survey of the field of modern teaching materials includes techniques of utilization. Opportunity for working with equipment and limited production practice are given.

Edu 532 *Photography for Teachers* 3

A basic course in photography which considers the nature of the photographic processes, camera handling, film processing, print production, and the utilization of photography in the school. Students will work in the photo-lab, making and processing their own pictures.

Edu 533 *Television in Education* 3

This course deals with the history and development of commercial and educational television stations in the United States. Considerable emphasis is given to the study of the existing educational television projects in the United States. A study of educational television closed-circuit systems and the equipment needed to operate such a system. Presents the theory and limited practice in planning and producing educational television lessons.

Edu 534 *Seminar in Instructional Materials* 2

A workshop-type course probing the problems in the use of the various instructional media and providing opportunity for investigating the values of community resources, teaching machines, television and other class selected areas of concentration. Emphasis placed on the experimental use of modern media with classroom students with the results discussed and evaluated.
Prerequisite: Edu 530 or a recent basic A-V course.

Edu 535 *Organization and Administration of the Audio-Visual Program* 2

This course includes the study and analysis of the function of the school's audio-visual education program. The selection and evaluation of materials and equipment, unit costs, problems of developing and maintaining an efficient operation. Stress is

placed on the necessity of developing an administrative philosophy and the role the audio-visual director plays in the improvement of teaching skills.
Prerequisite: Edu 530 or a recent basic A-V course.

Edu 540 *In-Service Education Seminar* 2
For teachers and supervisors who are interested in the many techniques, media and resources which can be utilized for in-service education programs. Study concerns the staff working together; preparation of curriculum materials; use of consultants; and community resources for organizing a school improvement program. Enrollment by permission of the instructor.

Edu 541 *Creative Teaching* 2
Study of the nature and conditions associated with creativity along with skills and techniques most likely to result in the full development of the creative potential of the learner.
Prerequisite: A course in Educational Psychology or its equivalent.

Edu 542 *Curriculum Development for Culturally Disadvantaged Children* 2
Historical presentation and analyses of curricular innovations attempting to aid the culturally disadvantaged in developing skills necessary for maximal personal adjustment to society. A study will be made of both the school and community's responsibility in this area. A variety of appropriate resources will be used. (Open by Permission of Instructor).

Edu 550 *Advanced Educational Psychology* 3
Intensive study of the processes by which skills, understandings, concepts and ideals are acquired; examination of teaching practices in relation to basic research on learning. A study of similarities and differences in learning theories.
Prerequisite: A course in Educational Psychology or its equivalent, and Edu 500.

Edu 566 *The Activity Program in the Secondary School* 2
This course is designed to provide the student with an understanding of the activity program in the secondary school curriculum. Emphasis will be given to best practices in how to organize and administer the program. It is designed to help the faculty adviser better understand his role in working with the homeroom, study halls, interest clubs, publications, assembly programs, student government, athletics, music, dramatic organizations and the like.

Edu 580 *History and Philosophy of Education* 3
Individual and group research employed to study the historic background and development of education and the co-ordinate influences which diverse philosophies have had on educational practices in a democratic social order.
Prerequisites: Edu 500 and Edu 510.

Edu 581 *The Motion Picture in Education* 2
This course deals with the history and development of motion pictures generally and educational motion pictures specifically. The nature and use of the various cinematographic techniques, such as animation, time lapse, slow motion, etc., are analyzed. The impact of the various types of motion picture—35 mm., 16 mm., and 8 mm.—will be examined with a section dealing

specifically with the single concept instructional film. Course includes evaluation of diverse types of films with respect to types of learning and the role of the motion picture. Limited examination of research in the use of educational motion pictures.

Edu 582 *Seminar in Research Communications* 2

Provides for an examination and review of research in audio-visual communication which has been reported. Prepares the student for utilizing research findings and enables him to study and prepare research problems in audio-visual education. Introduces general and specific topics and methods for applying research to answer problems relevant to audio-visual communication.
Prerequisite: Edu 530 or a recent basic A-V course and Edu 500.

Edu 583 *Audio-Visual Materials in the Secondary School* 2

Opportunity is given to the student to utilize those audio-visual materials that apply to their specific area of subject matter or concentration. Students will develop courses of subject relative to their subject area. The integration of audio-visual materials into the course of study to the class will constitute the major concentration of class work. Emphasis will be placed on the manner in which the selected audio-visual materials into the whole contribute to the expressed educational objectives of the unit.
Prerequisite: Edu 530 or a recent basic A-V course.

Edu 584 *History, Philosophy and Psychology of Audio-Visual Education* 2

A study of the historic development of audio-visual instruction. A consideration of when it was introduced as a tool for education and the philosophy underlying the teaching-learning process as it relates to the combined use of sight and sound. The theories of psychology which pertain to the effective utilization of audio-visual materials in the process of improving teaching techniques are a considerable part of the course.
Prerequisite: Edu 530 or a recent basic A-V course.

Edu 585 *Library Science* 2

Examination of principles of school librarianship, the library as an information center of books and non-book materials. Course covers the services of the school library, administration of a school library, cataloging and classification of the materials, along with other library functions such as that of a cultural center for the community.
Prerequisite: Edu 530 or a recent basic A-V course.

Edu 590 *School Law* 2

A course dealing with the legal background of educational organization in various states as it pertains to the role of the state itself, the intermediate and the local units. Particular attention will be paid to the legal status of the school board, the rights and privileges of the teacher, the board and the child. Much will be made of the case study technique.

Gui 500 *Principles and Techniques of Guidance* 2

A course concerned with the factors involved in educational, occupational, and social adjustments and how to secure, classify, analyze, interpret, and evaluate these factors for intelligent use by teachers and guidance workers.
Prerequisite: a basic course in psychology or guidance.

Semester Credits

Gui 564 *Homeroom Guidance* 2

A thorough study of the guidance function as it pertains to the homeroom teacher. Special emphasis is given to this form of guidance in the junior high school.
Prerequisite: Educational Psychology, and an introductory course in guidance.

Gui 567 *Group Guidance* 2

A study of the interactional processes involved in inter-group and intra-group situations with reference to the school program. Special attention is given to the role of the group leader. Opportunities are afforded students to participate in group thinking and behavior and to evaluate the performance of groups.
Prerequisite: An introductory course in guidance.

Gui 570 *Principles and Techniques of Interviewing and Counseling* 2

A study of theory and practice in interviewing as used in counseling and for other purposes involving person-to-person contact. Opportunities for actual practice in interviewing will be offered.
Prerequisites: Gui 500, and either Psy 552 or Psy 557 (or the equivalent).

Psy 554 *Group Dynamics* 2

This course deals with group structure and the interaction of persons within the group. Group cohesiveness, formation of group norms, and the relation of the individual to the group are all explored with a view to more effective group participation.
Prerequisite: General Psychology.

Psy 557 *Psychology of Adjustment* 2

The principles of mental hygiene are studied in depth and in relation to emotional and social adjustment.
Prerequisite: General Psychology and Psy 562 or equivalent.

Psy 562 *Psychology of Personality* 2

This course deals with the interaction and effects of the forces that affect personality development. Normal and neurotic development are contrasted, and the principles of personality measurement are explored.
Prerequisites: General Psychology, Educational Psychology and Human Development.

Psy 570 *Psychology of Mentally Atypical Children* 2

The status and characteristics of the mentally atypical child. The course is concerned with the mentally superior as well as the mentally retarded child.
Prerequisites: General and Educational Psychology, or the equivalent.

Psy 571 *Methods and Materials for Mentally Atypical Children* (Elementary) 2

A course dealing with the best practices for developing effective methods and materials for meeting the needs of mentally atypical children. Emphasis is on motivating the individual for accomplishing maximum capabilities as well as teaching groups to strive for proper adjustment and maximum achievement.
Prerequisite: Psy 570 or equivalent.

Psy 574 *Methods and Materials for Mentally Atypical Children* (Secondary) 2

Same as course number 571 with emphasis on teaching secondary school pupils.
Prerequisite: Psy 570 or equivalent.

Semester Credits

Psy 575 *Psychology of Physically Atypical Children* 2
The status and characteristics of children who deviate from the physically normal. A survey of sensory and orthopedically handicapped children and the social and psychological effects of such handicaps.
Prerequisites: General and Educational Psychology, or the equivalent.

Psy 576 *Methods and Materials for Physically Atypical Children* 2
A study of the best practices for developing effective methods and materials for meeting the needs of physically atypical children. Both individualized and group instruction methods are emphasized.
Prerequisite: Psy 575 or equivalent.

SpE 540 *Workshop in Special Education* 4
The Workshop will provide an opportunity to undertake an intensive program of observation and instruction of mentally retarded or physically handicapped children. Actual instructional experience with an atypical child will be combined with lecture, demonstration and case study. This Workshop is primarily for in-service teachers. (By permission of instructor).

ELEMENTARY EDUCATION

Art 500 *Art Activities in the Elementary School* 2
Formulating the art curriculum in the elementary school; organizing materials and procedures in keeping with contemporary trends in educational philosophy.

Edu 500 *Methods and Materials of Research* 2
An introduction to the basic principles of research in education with attention to types of research, techniques of gathering data, and the application of methods to specific types of research problems. The student will be introduced to research literature and typical research reports.

Edu 501 *Foundations of Reading Instruction* 3
A basic survey course covering the major areas of the reading field. Consideration is given to: reading readiness, initial reading instruction, word analysis, comprehension, reading skills development, evaluation of reading needs, and implications of the psychological processes involved. Open only to students with no recent undergraduate course in the teaching of reading.
Prerequisites: Educational Psychology and Child Development.

Edu 503 *Social Studies in Elementary Education* 2
A basic course in the teaching of social studies, dealing with content, materials, and methods (including the unit approach). Open only to those whose undergraduate major was *not* elementary education.
Prerequisite: Edu 501 or the equivalent.

Edu 504 *Reading in the Content Areas* 2
This is a course in the teaching of reading in the various content fields. The major topics are: the place of reading in the school program, problems in reading curricular materials, methods of meeting needs in different curriculum areas, general and specific reading skills, study methods, critical reading, adjusting to individual differences.
Prerequisite: Edu 501 or its equivalent, as determined by the instructor.

Semester Credits

Edu 505 *Curriculum and Research in Language Arts* 2
Curriculum planning; modern teaching methods; instructional materials; recent research and its application in the classroom in relation to the content and skills of oral and written communication.
Prerequisites: Edu 501 and 513, or their equivalent.

Edu 507 *Social Studies Curriculum and Instruction* 2
Curriculum planning; modern teaching methods; instructional materials; recent research and its application in the classroom; use of maps and globes.
Prerequisites: Educational Psychology and Edu 504.

Edu 511 *Unit Teaching in the Elementary School* 2
An intensive study of the unit method of teaching and the integrated curriculum, with special emphasis on the content fields.
Prerequisite: A recent course in the teaching science of social studies or health in the elementary school.

Edu 513 *Teaching the Communication Skills* 2
An introduction to the teaching of oral and written language — content, methods, materials, and organization. The main emphasis in the course is on listening, speaking, and writing. Intended for those whose undergraduate major was *not* elementary education.
Prerequisites: Child Development and Educational Psychology or their equivalent.

Edu 515 *Meeting Individual Needs of Elementary School Children* 2
An advanced course concerned with methods and materials for individualizing instruction in the subject and skill areas, and with meeting individual needs in personal adjustment.
Prerequisite: Undergraduate major in elementary education, or all required courses under B, Area of Specialization.

Edu 516 *The Teacher in the Elementary School* 2
An introductory survey course designed to acquaint students with the role of the elementary teacher and with the content and organization of the elementary curriculum. Open only to those whose undergraduate major was *not* elementary education. Should be taken early in the program.
Prerequisites: Psy 551 or the equivalent.

Edu 517 *Curriculum Problems in Elementary Education* 2
Examination of current trends and basic problems in the elementary school curriculum; practical, creative projects and investigations dealing with actual teaching situations.
Prerequisites: Edu 500, Edu 510, undergraduate major in elementary education or all required courses under B, Area of Specialization.

Edu 519 *The Kindergarten-Primary School Program* 2
A survey of kindergarten-primary principles, procedures, and materials appropriate to the school level indicated.
Prerequisite: Teaching experience in the elementary school.

Edu 521 *Analysis, Diagnosis, Correction of Reading Difficulties* 2
Treating remedial reading cases: individual and small group instruction; classification of types of problems; corrective and remedial procedures.
Prerequisite: Foundations of Reading or equivalent.

Semester Credits

Edu 523 *Supervision in the Improvement of Instruction* 2

Basic concepts and practices involved in working with teachers and student teachers toward the improvement of instruction. Topics to be discussed include: nature and scope of the processes of supervision, professional relationships, conferences, evaluation, and professional growth of teachers. Designed primarily for teachers who have or expect to have some supervisory responsibility; e.g. team leaders, cooperating teachers. Enrollment by permission of the instructor.

Edu 527 *Audio-Visual Materials in the Elementary School Curriculum* 2

Practice in techniques of using and evaluating the modern communications media in the classroom; correlation of audio-visual materials and techniques with the modern elementary school program.
Prerequisite: A basic A-V course.

Edu 561 *Guidance in the Elementary School* 3

Focuses on the classroom teacher as the key person in guidance and on ways of helping children develop healthy personalities. Presupposes an understanding of content and methods in elementary education.
Prerequisite: Educational Psychology and Child Development, or their equivalents.

Edu 563 *Measurement and Evaluation in the Elementary School* 2

Emphasizes a diagnostic approach in evaluating the various aspects of children's growth; includes both informal and formal methods of evaluation.
Prerequisite: Undergraduate major in elementary education (including Child Development), or all required courses under B, Area of Specialization.

Edu 565 *Improving Instruction Through Efficient Classroom Management* 2

Explores the teacher's role in planning and management of those activities which facilitate classroom instruction and learning. Special attention is given to planning and scheduling of learning activities, caring for class routines, insuring availablity of instructional materials and the efficient utilization of school time.
Prerequisite: Undergraduate major in elementary education, or all required courses under B, Area of Specialization.

Edu 567 *Creative Expression in the Elementary School* 2

A laboratory course designed to help teachers work with children in the creative arts. Emphasis is placed upon the child's needs to discover creative interests and upon the development of skills and refinements of taste needed for rich experience in art, music, and literature.
Prerequisite: Undergraduate major in elementary education, or all required courses under B, Area of Specialization.

Edu 591 *Research Seminar in Elementary Education* 1-2
(Elementary Education Majors)

Proposed research problems and procedures are formulated and presented for discussion and constructive, critical evaluation and analysis. Special attention is given to the format and preparation of research studies and guidance during the various stages of progress. Students who have not completed their primary research papers, research projects, or theses in other courses must sign for this course until the research has been completed.
Prerequisites: Edu 500, Edu 510 and all required courses in Area of Specialization (either A or B).

Semester Credits

Edu 610 *Research Project or Thesis* 1-3
In this course the student can complete his primary research report, either thesis or project, under an adviser's guidance. Appropriate credit will be given according to length and difficulty of project. Thesis will usually earn 2-3 credits and research projects will earn 1-2 credits.

Psy 551 *Seminar in Child Development and Behavior I: Aspects of Growth* 3
A study of children's needs, development, and behavior from birth to adolescence. Emphasizes the longitudinal approach to child study and the uniqueness of growth patterns. Open only to students with no undergraduate course in Child Development. Prerequisites: General and Educational Psychology, or the equivalent.

Psy 553 *Seminar in Child Development and Behavior II: The Case Study Approach* 3
An advanced course that involves studying the development and behavior of individual children. Case studies will be read and analyzed; pertinent topics and research findings will be discussed. Each student will prepare a case study of a child with normal problems.
Prerequisite: a recent basic course in child development or child psychology.

ENGLISH

Eng 501 *Modern Techniques for the Teaching of English* 2
An intensive investigation into modern techniques in the teaching of language arts, composition, and literature for the secondary school. A thorough study of the application of these techniques and an opportunity for practice in planning and designing units and courses of study.

Eng 502 *History of the English Language* 2
An examination of the basic influences on the structure and general nature of the English language as it is used today.
Prerequisite: At least one undergraduate course in the field of language structure and usage.

Lit 511 *English Literary Criticism (1800-1920)* 2
A study of the critical dicta which influenced the course of English literature between 1800 and 1920. Special consideration will be given to such major figures as Coleridge, Hazlitt, Ruskin and Arnold.
Prerequisite: At least one undergraduate course in English Literature.

Lit 512 *American Literary Criticism (1800-1920)* 2
A study of the critical dicta which influenced the course of American literature between 1800 and 1920. Special consideration will be given to Poe, Whitman, Howells, and the New England writers.
Prerequisite: At least one undergraduate course in American literature.

Lit 514 *American Literary Movements* 2
A detailed analysis of the development of American literature through a study of the major movements. Special emphasis will be placed on the influence of major writers on literary concepts, trends and critical dicta.
Prerequisite: At least one undergraduate course in American literature.

Semester Credits

Lit 521 *English Literature to Chaucer* 2

A study of certain significant figures in English literature beginning with the Old English Period and closing with the Pearl Poet. Emphasis upon origins, trends, and influences. Reading, reports, research.

Lit 522 *Chaucer* 2

A study of the life and works of Chaucer; readings, reports, and class discussions of major works and theories of origin and influence.

Lit 523 *Eighteenth Century Novel* 2

The significant master works of prose fiction in England from Defoe to the end of the century; development of types of the novel; the theories of structure, techniques of characterization, and the philosophies of the major authors.

Lit 524 *British and Continental Short Story* 2

A consideration of the short-story form especially as concerned with its origin, development, and current trends. Emphasis upon the influences of German, French, and Russian writers upon the British form.

Lit 525 *Biography* 2

A survey of biographical writings from Plutarch to the present. Emphasis upon origins and trends and major figures such as Boswell and Johnson.

Lit 526 *Tudor Poetry and Prose* 2

A study of the nondramatic literature in England from Wyatt to Jonson. Special emphasis is placed upon the interplay of exterior and interior influences in developing England's Golden Age.

Lit 527 *Stuart Literature to the Commonwealth* 2

An analysis of the growth of English literature from the accession of James I to 1650. Special consideration to the metaphysical school, the sons of Ben, and the political writers.

Lit 528 *Milton* 2

Detailed study of the work of John Milton, including major and minor poems and some of the prose.

Lit 529 *Victorian Prose* 2

A study of the prose writers of the last half of the nineteenth century with emphasis upon the major writers.

Lit 530 *Victorian Poetry* 2

A study of the poets of the last half of the nineteenth century with emphasis upon Tennyson, Browning, and Arnold. Literary movements of the time considered.

Lit 531 *Shakespeare's Predecessors in Drama* 2

A course designed to trace the development of the drama from classical antiquity to the time of Shakespeare. The purpose is to consider the nature, structure, and other major aspects of the principal types of drama.

Lit 532 *Advanced Shakespeare* 2

Discussion with readings, reports, and original research on selected plays; study of origins, development, and influence.

Semester Credits

Lit 533 *Romantic Prose and Poetry* 2
A study of the poets of the early nineteenth century with emphasis upon Wordsworth, Coleridge, Keats, Shelley, Byron. Literary movements of the time considered.

Lit 534 *Nineteenth Century American Prose* 2
A study of the major writers and influences in the 19th century American prose.
Prerequisite: At least one undergraduate course in the field of American literature.

Lit 535 *Twentieth Century American Writers* 2
A study of the major writers and literary movements of the period, 1900 to 1960.
Prerequisite: At least one undergraduate course in American literature.

Lit 536 *Twentieth Century Drama* 2
A survey of principal British and American playrights from Shaw to Arden and Miller, including an analysis of important plays and trends.

Lit 537 *Emerson and Thoreau* 2
Detailed study of the works of Emerson and Thoreau and of writers associated with them.

Lit 538 *Hawthorne and Melville* 2
Detailed study of the works of Hawthorne and Melville.
Prerequisite: At least one undergraduate course in American literature.

Lit 541 *Greek and Roman Literature in Translation* 2
A study of the major dramatic, epic, and lyric works from the classical period with their influences upon Anglo-American literature from the sixteenth to twentieth centuries.

Lit 542 *Spenser* 2
A study of Spenser's poetic work with emphasis on *The Faerie Queene* and its influence.

Lit 550 *Literature for the Elementary School* 2
A course designed to acquaint the student with the content and approach of the literature program in the elementary school. Although this course is designed primarily for elementary school teachers, it can also be pursued profitably by administrators, curriculum specialists and others interested in the elementary school level.

Eng 543 *Advanced Problems in Public Speaking* 2
Intensive study of parliamentary procedures for both large and small groups with special emphasis on the problems of the chairman, committee members, conventions, etc.; leadership and participation in group discussion on current public questions; speech making. Special research project is required.

Eng 544 *Problems of Speech Correction* 2
Discussion, lectures, and demonstrations on the rehabilitation of stammerers, of persons with cerebral palsy, cleft palate, hearing loss, and aphasia. Special emphasis on diagnosis, problems, integration with medical and training centers, treatment, and adjustment with society.

Semester Credits

Eng 590 *Seminar in English* 1 or 2
To be taken at the time thesis is developed. Admission with approval of department, also, for study of a special problem.

ThA 536 *Television: Equipment, Planning, and Production I* 3
The basic concepts of television production and programming as they relate to instructional use in the classroom. Includes information on the operation and anatomy of the television studio.

ThA 537 *Television: Equipment, Planning, and Production II* 4
Continuation and development of skills and knowledge in Theater Arts, Student will be required to develop and produce a series of educational television lessons.

ThA 538 *Television: Production of Graphic Arts* 3
Gives the student practical experiences in the production of visual and graphic materials necessary in television. Workshop sessions where graphics are prepared and presented by television, followed with evaluation by the group.

FOREIGN LANGUAGES

GROUP I PROFESSIONAL EDUCATION

Lan 500 *Methods and Materials of Research* 2
A study of the techniques of research in Foreign Language Education, including location, evaluation, and interpretation of data. Attention is given to correctness of form in reporting data.

Lan 501 *Linguistics* 2
An introduction to the study of language as a science. A history of languages in general, with particular attention to the Indo-European branch. The application of the science of linguistics to the teaching of languages.

Lan 502 *FLES* 2
A study of the problems involved in the teaching of foreign languages in the elementary school. Teaching materials are surveyed and attention is given to special techniques required for the teaching of a foreign language at the elementary school level. Observation of actual elementary school foreign language classes.

Lan 503 *Techniques of Language Teaching* 2
An intensive survey and critical analysis of the texts and other materials used in foreign language teaching. A study of the latest approved methods of teaching foreign languages at the secondary level. Observation of secondary level foreign language classes being taught.

Lan 504 *The Language Laboratory* 2
A study of the latest approved techniques for the use of the language laboratory in foreign language teaching. A survey and analysis of commercial materials available for use in the language laboratory. Practice in composing laboratory drills and in the preparation and voicing of scripts.

GROUP II — FRENCH

Fre 511 *Romance Philology (French)* 3
A study of the historical development of French phonology and morphology from their earliest beginnings to the present. A survey of the chief characteristics of the various Old French dialects, based on an analysis of Old French texts.

Semester Credits

Fre 512 *Explication de Texte* 3
A study of the French technique of textual and stylistic analysis known as "explication de texte". Practice in applying these techniques is undertaken through a series of analyses of the works of selected French writers.

Fre 513 *Phonetics* 3
An intensive study of the sounds of French through the application of the phonetic alphabet with a view to developing an absolute mastery of the correct pronunciation and intonation of the French language. Laboratory drill with the latest recordings by leading phoneticians.

Fre 514 *Advanced Grammar and Composition* 3
A conceptual approach to the study of French grammar. An intensive analysis of the various principles of French grammar and syntax. An evaluation of the changes which have occurred in French grammar and usage in recent decades.

Fre 520 *Rabelais and Montaigne* 3
A study of the works of the two major prose writers of the French Renaissance. A survey of the major critical works which deal with their life and writings.

Fre 521 *Moliere* 3
An intensive analysis of the plays of Moliere. A study of the history of comedy in France, and of the life and times of Moliere the man.

Fre 522 *Voltaire and Rousseau* 3
A study of the major works of Voltaire and Rousseau and a critical and analytical comparison of their respective philosophical points of view. Their impact on the character of Western civilization is also analyzed.

Fre 523 *Proust* 3
The reading and intensive analysis of *A la Recherche du Temps perdu.* A survey of Proustian criticism is undertaken along with a study of Proust the man. The place of Proust in the history of the novel is evaluated.

Fre 524 *Gide* 3
A study of Gide's life and writings. An attempt is made to synthesize Gide's philosophy as an artist and as a human being. A discussion is carried on of Gide's importance in French literature of the first half of the 20th Century.

Fre 530 *French Classical Tragedy* 3
The tragedies of Corneille and Racine are read and analyzed. The history of tragedy in France is studied to give the student an insight into the forces which culminated in the work of the great classical dramatists.

Fre 531 *The French Novel (to the end of the 19th Century)* 3
A history of the novel in France, with particular emphasis on the works of the major French novelists of the nineteenth century: Hugo, Stendahl, Balzac, Flaubert, and Zola.

Fre 532 *The 20th Century French Novel* 3
A study of the French novel in the twentieth century and of the various philosophical, social and aesthetic doctrines which have helped to shape it. An analysis of the masterpieces of the outstanding novelists of the century. (Excluding Proust and Gide, who are treated in a separate course.)

Semester Credits

Fre 533 *Lyric Poetry* 3

A study of the evolution of French lyric poetry with particular stress on the 19th century. An analysis of the forms, techniques and rules of French versification. A survey of French poetic doctrine as it evolved through the centuries.

Fre 534 *The Contemporary French Theater* 3

The principal dramatic works of the 20th century are studied and analyzed against the history of the development of the theater in France. The latest techniques and innovations are analyzed and an assessment of their importance and impact on the modern theater is attempted.

GROUP III — GERMAN

Ger 511 *German Philology* 3

A study of the development of German phonology and morphology from their earliest beginnings to the present. A survey of the chief characteristics of Gothic, Old Saxon and Old High German will be introduced. Analysis of the language of the Low German Heliand and the earliest High German documents will be given.

Ger 512 *German Civilization* 3

This course will deal with the social structure of Germany, the evolution of its institutions, and its achievements in the various fields of art.

Ger 513 *Phonetics* 3

A study of the sounds, forms, and structure of modern standard German, using recorded materials and selected texts.

Ger 514 *Advanced Grammar and Composition* 3

Study of stylistic resources of modern German, based on reading and analysis of selected texts. Discussion, oral and written drill.

Ger 520 *The Age of Goethe* 3

A thorough study of the Golden Age of German literature. German Enlightenment, Storm and Stress and Classicism will be studied. Literary masterpieces will be read and analyzed. Special attention will be given to English influences, especially Shakespeare.

Ger 521 *Goethe* 3

A study of Goethe's works and his development toward classicism. A survey of the major critical works which deal with his life and writings.

Ger 522 *Schiller* 3

A thorough study of Schiller's dramatic works and his development toward classicism. A survey of the major critical works which deal with his life and writings.

Ger 530 *German Reformation, Baroque and Pseudo-Classicism* 3

Literary trends in the period of Reformation and Counter Reformation will be studied. The influence of French classicism upon German Literature of the late 17th and early 18th century will be analyzed and discussed.

Ger 531 *German Literature of the 19th Century* 3

Romanticism, poetic realism, naturalism with special emphasis on the great dramatic and lyric poets of the period.

Semester Credits

Ger 532 *German Drama of the 19th and 20th Centuries* 3
A study of the works of the major dramatists of the 19th and 20th Centuries. Special attention will be given to the dramatists of naturalism and expressionism.

Ger 533 *Middle High German Literature* 3
The study of Middle High German literature from 1050-1300 with emphasis on the principal representatives of the Popular and Court Epic and the lyric poetry of the Golden Age.

Ger 540 *The German Short Story* 3
A study of the German Short Story from Romanticism to the present. German Feuilleton will be included. Special attention will be given to Thomas Mann, Kafka and the post-second World War writers.

Ger 541 *Modern German Poetry* 3
A study of modern German poetry with emphasis on Stefan George and his circle, and Rainer Maria Rilke.

Ger 542 *Modern German Novel* 3
The following trends of the modern German novel will be studied: Naturalism, Impressionism, Expressionism and the "New Matter-of-Factness" with emphasis on Hesse, Thomas Mann, Doeblin and Kafka.

GROUP IV — SPANISH

Spa 510 *Advanced Spanish Phonetics* 3
A theoretical and practical approach to phonology, phonetics and phonetic transcription. Regionalistic and dialectal variations are also studied with Tomas Navarro Tomas' standard text: *Manual de pronunciacion espanola.*

Spa 511 *Advanced Spanish Grammar and Stylistics* 3
An informal rapid review of Spanish grammar with emphasis on related problems fundamental to the American classroom. Exercises will include idiomatic expression, various levels of style and translation.

Spa 512 *Spanish Civilization* 3
A study of the major philosophical and artistic contributions of the Hispanic world to the development of Western civilization. An analysis of the philosophical and psychological aspects of the development of Spain's social and economic institutions, and the character of her people as reflected in the arts.

Spa 520 *Cervantes* 3
Detailed study and analysis of the life and works of Miguel Cervantes Saavedra: the *Novelas ejemplares, Ocho comedias y ocho entremeses, La Numancia, La Galatea,* all of which lead to a careful study of the meaning, philosophy and influence of *Don Quixote.*

Spa 521 *Lope de Vega* 3
The Spanish comedia is viewed as an expression of the Spanish people with emphasis upon the popular and national elements of this theater. Lope de Vega is studied as the chief innovator and leading figure of the first half of the Golden Age.

Spa 522 *Calderon* 3
A study of the contribution of Calderon, the leading figure of the second half of Spanish Golden Age "comedia." A detailed analysis of his *autos sacramentales* is followed by a study of the Baroque, and the philosophical and dramatic qualities of his theater.

Semester Credits

Spa 530 *Medieval Spanish Literature* 3
A study of the *mester de juglaria* and the *Poema del Cid;* a view of early related epics and the *mester de clerecia* leads to an analysis of Spain's early historical chronicles. The beginnings of the early Spanish theatre are traced in the framework of this background.

Spa 531 *Spanish Renaissance and Humanism* 3
Consideration of the leading proponents of the humanistic spirit in Spain: Nebrija, Erasmus, the brothers Valdes, the Spanish Inquisition, the Renaissance theatre and the novel, Juan del Encina, Torres Naharro and *la Celestina.*

Spa 532 *Nineteenth Century Spanish Literature* 3
The development of the philosophy and spirit of the Spanish romanticists and *costumbristas,* Duque de Rivas, Espronceda, Gomez de Avellaneda, Becquer, Larra and Mesonero Romanos; the drama and novel as represented by: Pardo Bazan, Palacio Valdes, Clarin and Galdos.

Spa 533 *The Generation of 1898* 3
An overview of the revitalizing forces which took hold in the late nineteenth century and a study of the works of: Unamuno, Azorin, Menendez Pidal, Pio Baroja, Valle Inclan, Benavente, Martinez Sierra and Ruben Dario.

Spa 540 *The Picaresque Novel* 3
The picaresque novel as a truly indigenous creation of Spain: *Lazarillo de Tormes, Guzman de Alfarache, Vida del Buscon;* the picaresque novel as a literary tradition in Spain and in other literary traditions.

Spa 541 *The Modern Spanish Theatre* 3
The "Ibsenite" and social dramas of the late nineteenth century represented by: Lopez de Ayala, Jose Echegaray and Galdos; the transition period headed by Martinez Sierra and the Brothers Quintero will lead to Spain's modernistic drama headed by Federico Garcia Lorca and Alejandro Casona.

Spa 542 *Lyric Poetry* 3
A study of the evolution of Spanish lyric poetry with special emphasis on early forms, Renaissance italianate forms, and the blossoming of lyric poetry in the nineteenth and twentieth centuries.

Spa 550 *The Spanish American Novel* 3
The development of the Novel in Latin America is analyzed and discussed from the point of view of the major characteristics of each period—the colonial period, the period of independence, the romantic period—and realism, modernism, *criollismo,* and naturalism.

GEOGRAPHY

Geo 500 *Biogeography* 2
A study of causes and effects of major floral and faunal distributions over the earth. The course will stress the natural, original distribution of plants and animals that are of major economic importance to man, and how man has changed these original patterns. The study of new and potential uses by man of the plant and animal world will be included, with particular attention given to the attempt by man to enlarge the distribution area of the plants and animals he finds economically useful.
Prerequisite: World Geography.

Semester Credits

Geo 501 *Geomorphology* 3

The course deals with the classification of major and minor surface features of the earth and their origins. The structures of land forms and the earth processes which brought them about are explained with special references to their relationships to mining, engineering, and other human activities. The interpreting of land forms from topographic maps is an important part of the course.

Geo 502 *Regional Physiography of North America* 3

A regional analysis of the surface configuration of the North American continent. Emphasis will be placed on the geographical interpretation of those aspects of the terrain especially significant in affecting utility of the land.
Prerequisite: Physiography, Geology or Geomorphology.

Geo 503 *General Climatology* 3

The course deals with the meteorological factors influencing the climates of the world and the general patterns of world climates. Climatological data are examined in reference to natural situations and climatic classification. A complete survey of the world climates is presented.

Geo 504 *Regional Climatology of the Continents* 3

A descriptive and explanatory analysis of the characteristics of the climates of each continent. Emphasis is on deviations from the normal world pattern as they are developed through climatic controls associated with the various continents.

Geo 505 *Advanced Cartography* 3

An advanced study of cartographic methods including laboratory work in advanced construction techniques. Map construction, graphic representation, land form drawing, lettering and color reproduction are included in the work.
Prerequisite: Geography 303 or consent of department head.

Geo 506 *Advanced Physical Geography for Teachers* 3

This is a study of basic physical geography with emphasis on a background for elementary teachers. The fundamental concepts in earth-sun relationships, land masses, landforms, oceans, weather, and climate and our natural resources are explained as elements and controls in the general geography of the earth. The basic concepts of physical geography are studied in relation to the total geographic concept.

Geo 507 *Advanced Map Interpretation* 3

This course aims to provide the student with an understanding of the properties of maps such as scale, projection, coordinates, legend, and other marginal information. Special emphasis will be directed toward the reading and interpretation of large-scale topographic maps. This includes the recognition of natural features and land uses. The course also includes the introduction to statistical maps showing amount, value, or density distribution using dots, lines, and colors.

Geo 520 *Problems of Economic Geography* 3

A study of economic situations in our country and the world, with emphasis on the major problems of production, surplus, marketing, conflicting national policies and special problem areas. Also the problems in gathering, presenting and comparing economic data will be analyzed.

Semester Credits

Geo 521 *World Economic Patterns* 3

The course will consider world resource regions and patterns of productivity. Part of the course will deal with changing patterns in world trade. New economic alignments, such as the Common Market groups of Western Europe will be discussed. The effect of newly discovered raw material resources, and the impact of increased industrialization in previously non-industrialized nations and regions will be analyzed. The problems associated with the economic development of backward areas will also be studied.

Geo 522 *Agricultural Geography* 3

A survey of the distribution, variations and significance of the major types of agriculture in the world. Analysis of major world crops and their distribution, with emphasis on relationships to climate, soils, terrain and economic factors will be developed.

Geo 523 *Advanced Conservation of Natural Resources* 3

An economic and geographic appraisal of resource conservation in the United States, including factors of regional and national planning for resource utilization. The summer offspring of this course may be organized as an advanced conservation workshop.

Geo 524 *Ethnic and Demographic Problems of Geography* 2

A study of the characteristics and distribution of ethnic groups, and the geographic problems that arise from densities of population involving ethnic groups. The course will also include an examination of the physical, social, and economic population characteristics of the ethnic groups. Current and projected world patterns of population distribution will be presented.

Geo 525 *Geography of Regional Planning* 3

The course will consider the current levels of areal development, first on a world scale and then on a national, state, and local scale. The course includes an examination of the factors of space, resources, and natural situation that apply to regional planning. Special emphasis will be given to local or near-by planning projects.

Geo 526 *Urban Geography* 3

The course will consider the rise and growth of cities, the economic base of cities, the classification of cities, cities as central places, and the size and spacing of cities. Attention will also be given to the internal structure of cities and the urban-rural fringe of cities.

Geo 527 *Political Geography* 2

A study of the development and trends of the present world political pattern. The course involves spatial factors affecting the organization of the various political units of the world. Patterns of geographical development will be considered and analyzed.

Geo 528 *Concepts of Modern Global Geography* 3

The course provides an over-all view of physical and human geography on a world scale. Analysis of the physical environment, the distribution of man on the earth and relationships between geography and political functions are important aspects of the course. The study of earth space is related to economic and strategic factors.

Semester Credits

Geo 529 *Geographic Influences in World History* 3
Geographic influences in selected aspects of world history are developed. Geographic factors in settlement and expansion, the development of raw materials and major trade areas and routes analyzed. Study is made of changes in the use of land and natural resources in significant periods of world history and the geographic factors related to these changes.

Geo 540 *Geography of the United States* 3
The course includes a study of the physical geography of the country as a basis for an analysis of its geographic regions. Special emphasis is placed on natural resource production, transportation factors, general economic patterns and urban and industrial concentrations.

Geo 541 *Geography of the United States in its World Relations* 3
An analysis of the interdependence of our country in the world of nations. Changing patterns within the United States will be analyzed in relation to economic, strategic and political developments in other parts of the world.
Prerequisite: World Geography.

Geo 542 *Geography of Canada* 3
A study in the physical and cultural regionalism of Canada. The course will survey the natural resources and patterns of human occupance including agriculture, industry and transportation.

Geo 543 *Geography of Mexico and Middle America* 3
A regional geography of Mexico, Central America and the West Indies. The course will survey the development of political divisions and their present day functions in relation to their geographic conditions. Special emphasis will be placed on the geographic analysis of the part these countries play in Inter-American affairs.

Geo 544 *Geography of South America* 3
A regional geography of South America, including an analysis of the physical base, settlement, agriculture, mining and manufacturing. Emphasis will be placed on Inter-American relations of these countries.

Geo 545 *Geography of Europe (excluding the U.S.S.R.)* 3
An advanced study of the geographic factors in the economic, social and political progress of the European nations. Emphasis will be put on current major problems of the continent in light of their geographic background. Consideration will be given to some geopolitical problems.

Geo 546 *Geography of the Soviet Union* 3
The course includes both European and Asiatic U.S.S.R. and the satellite nations. The elements of the geographic environment and the major regional divisions will be studied in relation to the resource base and the economic and political aims of the country. Emphasis will be placed on the positive and negative geographic factors in relation to the strength and weakness of U.S.S.R. as a major world power.

Geo 547 *Geography of Asia (excluding the U.S.S.R.)* 3
An over-all survey of Asia including a study of physical and geographic regions, with concentrations on the monsoon realm, the Far East and Southwest Asia. The resources and major activities of the people in regions of densest population and greatest economic and strategic importance will be stressed.

Semester Credits

Geo 548 *Geography of the Pacific Lands* 3

A study of the physical and cultural geography of Pacific Asia, Australia and the major island groups. Emphasis will be placed on the resources, economic factors, and strategic significance of these areas in light of the present day world economic and political situations.

Geo 549 *Geography of Africa* 3

A study of the physical structure and resources of the continent in light of competing cultures and economic forces which have helped shape the human geography of the continent. The impact of alien cultures, with particular emphasis on Islamic and Western influences in creating geographic regions will be considered. Africa's strategic importance in the present and future world picture will be noted.

Geo 580 *Seminar in Geography in Education* 2

An advanced course on geography in the present day American schools. The work is concerned with meeting the needs of those expecting to teach geography. Techniques of teaching geography in the various forms in which it is currently presented in relation to the curriculum are emphasized.

Geo 581 *Seminar in Modern Philosophy of Geography* 2

A review of modern geographic thought with emphasis on the contributions of American geographers. Points of view on environmentalism, regionalism and other doctrines that find expression in geographic literature will be examined.

Geo 582 *Seminar in Geographic Literature* 2

The course surveys the geographic literature of various periods in the development of geographic thought and research, with special emphasis on present day writings. Students will examine and discuss the works of many important geographers.

Geo 583 *Seminar in Geographic Writing* 2

A review of the various types of geographic writing and experience in original writing by the students forms the major part of this course. Experience in descriptive writing, statistical analysis and research reporting are included in the program.

Geo 584 *Seminar in Geographic Research* 2

The course will survey the various sources of geographic information and the methods of handling such materials for compiling into reports and geographic writing. Bibliographic aids and archival sources of geographical material will be used in preparation of research reports.

Geo 585 *Geography Field Course* 3

An advanced field course in geography to include both urban and land use studies. Field methods, mapping and assembling of field study findings into geographical reports will be part of the course.

Geo 586 *Area Field Studies (I, II, & III)* 3 to 9

A specific geographic region or area is selected for study in the field. This includes various parts of the United States and foreign countries. Methods in field study, mapping, and assembling of field study findings into geographical reports are included in the procedures. Costs will vary with each course offering. A student may take several of these field courses.

Semester Credits

Geo 587 *Geography Workshop for Teachers* 3
A combination of research, field work, teaching procedures and group studies on one or several phases of geography will be organized and carried out on a workshop basis.

Geo 588 *Modern Techniques of Teaching Geography* 2
An advanced study of present day techniques in teaching geography in secondary schools. The course deals with courses of study in geography, analyzes present day textbooks and acquaints the student with various teaching aids and materials. Students will receive experience in presenting geography lessons and evaluating the experimental methods used in the course.

GUIDANCE*

Gui 500 *Principles and Techniques of Guidance* 2
This course gives an over-all view of the role of guidance in the educational program and deals with such guidance functions as the inventory service, group guidance, counseling placement, follow-up duties of various guidance workers, and other related concepts.

Gui 540 *Evaluative Methods in Guidance I* 2
This is a general course geared for people planning for guidance at either the elementary or the secondary level. Emphasis in this course is placed on intelligence, personality, and special abilities in testing. The course also deals with such testing concepts as reliability, validity, standardization, and other pertinent aspects.
Prerequisite: Edu 521, Educational Statistics.

Gui 541 *Evaluative Methods in Guidance II* 2
(For Secondary Majors Only)
This course will highlight aptitude tests, interest inventories, secondary achievement tests, rating scales, and other non-test evaluative instruments useful in guidance work.
Prerequisite: Gui 540.

Gui 556 *Occupational, Educational, and Social Information in Guidance* 2
A course concerned with the numerous factors involved in occupational, educational, and social adjustments, and how to secure, classify, analyze, interpret, and evaluate these factors for intelligent use by teachers and guidance workers.
Prerequisite: One course in guidance or psychology.

Gui 562 *Organization and Administration of the Guidance Program* 2
A survey of current literature in guidance and counseling will be made with emphasis upon problems focusing on initiating, organizing, staffing, and administering the guidance services.

Gui 564 *Homeroom Guidance* 2
A course which assists the teacher and guidance worker in developing sound homeroom guidance practices in relation to proper grouping, programs, and methods of social, educational, and vocational guidance.

*Depending upon approval by the Department of Public Instruction.

Semester Credits

Gui 565 *Supervising the Guidance Program* 2
The function of the individual charged with the responsibility of supervising the guidance program in a particular school system. A survey of the modern practices and principles for coordinating the guidance and counseling duties assigned to teachers. Individual and committee responsibilities in collecting and disseminating information.

Gui 567 *Group Guidance* 2
A study of the interactional processes involved in inter-group and intra-group situations with reference to the school program. Special attention is given to the role of the group leader. Opportunities are afforded students to participate in group thinking and behavior and to evaluate the performance of groups.

Gui 570 *Principles and Techniques in Counseling* 2
Emphasis is placed on the counselor's work with respect to principles, approaches to counseling, techniques of interviewing, and to practical aids employed in the counseling process. Attention is also given to the preparation of the counselor, his working environment, and upgrading his work.
Prerequisite: Consent of advisor.

Gui 571 *Clinical Techniques in Guidance* 2
This course offers practical experience in the use of clinical instruments in the field of guidance. The rationale behind such instruments will also be stressed.
Prerequisite: Gui 570.

Gui 572 *Introduction to Rehabilitation Counseling* 2
This course highlights counseling and assisting physically and emotionally disabled persons in achieving optimal personal, social, and vocational adjustments and overcoming barriers to independent living.
Prerequisites: Psy 531, Psychology and Guidance of Exceptional Children and Youth, and Gui 556, Occupational, Educational, and Social Information in Guidance.

Gui 590 *Practicum in Guidance* 1-4
Practice counseling under supervision. This will include interviewing for background information; testing; using occupational, educational, and socio-economic data and counseling.
Prerequisite: Consent of advisor.

Psy 531 *Psychology and Guidance of Exceptional Children and Youth* 2
This course will deal with the psychology and physical factors underlying various types of exceptional children and youth, and how these individuals can be assisted to make occupational, emotional, and social adjustments.

Psy 542 *Measurements of Interests and Personality* 2
An analysis of standardized instruments for the measurement of interest, and attitudes, adjustments, and other personality variables. Rating scales and other non-test methods will be examined.
Prerequisite: Gui 540 or Gui 541.

Psy 551 *Seminar in Child Development and Behavior I: Aspects of Growth* 3
An intensive study of elementary school children — their development, needs, behavior — and some techniques of studying children individually and in groups. Course content and organization will depend on the interests and needs of class members. Open only to those who have **not** had an undergraduate course in Child Development and Child Psychology.

Semester Credits

Psy 552 *Seminar in Human Development and Behavior (Adolescent and Adult)* 2
This seminar deals with the problems unique to the adolescent and young adult against the broad background of human physical, social, and emotional development. A research project in the area will be organized.

Psy 553 *Seminar in Child Development and Behavior II: The Case Study Approach* 3
An intensive study of the individual child, involving the making and interpreting of case studies, and the utilization of recent research in child development and psychology.
Prerequisite: An undergraduate course in Child Development or Child Psychology or Psy 551.

Psy 554 *Study of the Individual: Adolescent and Adulthood* 2
The place of the individual inventory in the guidance process with particular emphasis on the case study. Analysis is made of situations requiring case studies. Methods of collecting data, analyzing the information for the purposes of isolating causes of difficulties, and suggesting treatment are thoroughly examined. Actual case studies will be undertaken.

Psy 562 *Psychology of Personality* 2
This course deals with the structure of personality and process in personality development. Differences between healthy and neurotic personality development are emphasized, and the sources of personality disturbance are studied. The course includes the principles underlying personality testing and the types of personality tests.

Psy 563 *Mental Hygiene* 2
The emphasis in the course is on ways of achieving positive mental health. The dynamics of personality disturbances are studied, and ways of dealing with such disturbances are considered with a view to helping people to help themselves.

Psy 570 *Psychology of Mentally Atypical Child* 2
The status and characteristics of the mentally atypical child. The course is concerned with the mentally superior child as well as the mentally retarded child.
Prerequisites: General or Educational Psychology or the equivalent.

Psy 573 *Human Development: Psychology of Maturity and Aging* 2
This course will discuss the outstanding problems of the mature individual in a changing democratic society in relation to such problems as vocational readjustments, marriage, family life, and other aspects of social life. The course will highlight problems of the aging in relation to work, leisure time activities, retirement, health, religion, security, and other aspects of aging. This course is recommended for those planning on going into social welfare work and other non-school forms of guidance and counseling.

Psy 580 *Individual Psychometric Techniques: The Wechsler Scales* 2
This course will highlight the historical development, administration, scoring, and interpretation of the Wechsler Scales.
Prerequisites: Gui 540 or Gui 541 on Evaluative Methods in Guidance.

Psy 581 *Individual Psychometric Techniques: The Binet Scales* 2
This course stresses the historical development, administration, scoring, and interpretation of the Binet Scales.
Prerequisite: Gui 540 or Gui 541 on Evaluating Methods in Guidance.

Semester Credits

Hum 500 *Seminar in the Humanities* 2

This is a composite course composed of three major fields of subject matter: (1) art and architecture, (2) music, (3) literature. This material is closely correlated to show the relationship of the three fields to each other and the central theme of a general philosophy connecting these fields to life. The instructors teaching this course develop specific material in concert to establishing an over-all unit. (This course is required of all curricula.)

Edu 500 *Methods and Materials of Research* 2

A course designed to acquaint the student with the basic techniques and procedures in research. This course treats the major types of research and the methods for locating, evaluating, and interpreting evidence. It also includes the actual preparation of a research paper. It is given by curriculum (elementary, music, secondary, and health and physical education) in order to meet the needs of the specific fields. (This course is required of all curricula.)

Edu 502 *Secondary School Curriculum* 2

A survey of the current practices and trends in reorganizing and re-orienting the secondary school curriculum, with emphasis on the various integrating techniques. Particular attention will be given the experimental results of such practices. Specific application will be made to each of the major subject matter areas.

Edu 510 *Seminar in Educational Foundations* 2

The history of education; factual history integrated with educational philosophy and thought; the evolution of present educational theories and issues from early times. This course is required of all curricula in the college.

Edu 517 *Curriculum Problems in Elementary Education* 2

Examination of basic problems and current trends in elementary education; practical, creative projects and investigations dealing with actual teaching situations.

Edu 530 *Selection and Effective Utilization of Audio-Visual Materials* 2

Concerns the approved methods of selecting Audio-Visual materials for maximum value to the curriculum as well as principles applied to efficient use of each of the major types of materials. Prerequisite: Basic A-V course.

Edu 561 *Guidance in the Elementary School* 3

The function of guidance in relation to children's needs; emphasizes principles and techniques which are most applicable in the elementary school guidance program. The teacher's responsibility as a counselor to young children.

Edu 566 *The Activity Program in the Secondary School* 2

A course dealing with the organization and development of an educationally sound program. A survey of the various types of activities and their function in the over-all school program. Emphasis is upon the character-building and leadership opportunities for students as well as the role the teacher plays in such a program.

Mat 521 *Educational Statistics* 2

A course in statistics for teachers. This course includes measures of central tendency, deviation, correlation and tests of significance of results.

Semester Credits

Mat 522 *Advanced Educational Statistics* 2

A continuation of Mat. 521. It includes applications of various distributions, analysis of variance, co-variance, and multivariate analysis.

Soc 531 *Social Pathology* 3

A study of cultural patterns defined by society as undesirable. Analysis of the role of social science principles relating to the functioning of the family, education, and the state in modern society. Pathological patterns in the economic, educational, and political life resulting in social disorganization will be discussed.

Soc 532 *Historical Sociology* 3

A study of the history of social thought from early primitive beginnings to recent contemporary times. The course makes use of social thought in Europe and America. Emphasis is given to a survey of the work and personalities of outstanding American sociologists, projected on the background of social theory and research.

HEALTH AND PHYSICAL EDUCATION

HEd 500 *Methods and Materials of Research* 2

A study of the techniques of research in education with specific application to the field of health, physical education and recreation.
Prerequisite: A course in Measurement and Evaluation in Health, Physical Education and Recreation.

HEd 501 *Advanced Rhythmical Foreign Gymnastics* 2

A comparative study of foreign systems of rhythmical gymnastics stressing music and rhythmical movement done in free style with hand apparatus such as balls, hoops, and wands.

HEd 502 *Elementary Physical Education Workshop* 2

A complete orientation for the teaching of elementary physical education. Principles and practices will be presented and developed. A variety of appropriate activities will be considered from the standpoint of their use at various grade levels.
Open elective for non-Physical Education majors. Those major students wishing to take this course must secure advance approval.

HEd 503 *Advanced Aquatics* 2

A course for aquatic directors, physical education supervisors, recreation and camp directors, and school administrators. A prerequisite of a high degree of competitive skill is not necessary. The course contains a clinical approach to the teaching and coaching of swimming, diving, and life saving with emphasis on the latest techniques of class organization and instruction. There is also an analysis of competitive diving and swimming strokes from the problem-solving viewpoint; a planning of an all-inclusive aquatic program for schools and camps; and a critique on facilities, equipment and personnel direction. Each student will also pursue a major area of research.

HEd 504 *Dance in Education* 2

Contemporary use of all forms of dance found in schools. Opportunities will be given to develop programs in a specific area of choice. Resources in terms of a variety of music will be fully developed.

Semester Credits

HEd 510 *School and Community Recreation* 2
A study of community recreation with special emphasis on the role of the school in relation to the total program.

HEd 511 *Field Problems in Recreation* 2
A study of the field problems commonly met in recreation. Each student will work in a specific problem area in a recreational field. Conferences and resourses will be used in developing solutions to the problem. (Admission by approval of major professor and the Director of Health, Physical Education, and Recreation.)

HEd 512 *Outdoor Education Workshop* 2
A study of the principles, procedures, and skills necessary to conduct an outdoor education program. Students will participate in and serve as leaders in a college sponsored outdoor education program.

HEd 520 *Advanced Coaching* 3
A study of recent trends and changes in theories and techniques of teaching sports. Mechanical principles of efficient movement will be analyzed. Emphasis will be on research related to competitive performance. Specialists in several areas of coaching will serve as guest panelists in this course.

HEd 521 *Administrative Supervision of Interschool and Intramural Athletics* 3
The organization and administration of athletic and intramural programs including the theory principles, and objectives at various levels of competitions. Job specifications of athletic and intramural directors and the delegation and assumptions of responsibilities will be given detailed consideration. Practical operating policies and procedures for athletic administrators will serve as a guide for this course.

HEd 530 *Scientific Bases for Physical Education* 3
A course devoted to the study and analysis of scientific data related to the selection, value, and techniques of instruction in physical education activities. Major emphasis will be on the basic scientific approaches to motor learning and the development of skill patterns.
Prerequisites: Anatomy and Physiology I and II, and Applied Physiology or their equivalents.

HEd 531 *Adaptive Physical Education Workshop* 3
The recognition of the atypical child as part of a total teaching situation. The nature and extent of common handicaps will be studied. Emphasis will be based upon positive application of activities in the physical educaton field to handicapped children individually and in groups. Students will be placed in the positions of assistant instructors in programs for handicapped children. Activities will include swimming, sports, and games.
Prerequisites: Undergraduate psychology, anatomy and physiology courses.

HEd 532 *Modified Physical Education (Open to ALL graduate students)* 2
A course designed to help the physical education and/or the classroom teacher to select and modify the well-known physical education activities so as to meet the needs of children with special restrictions.

HEd 533 *Remedial Physical Education* 2
A course designed to assist the graduate physical educator to scientifically select and administer specific bodily movements for the purpose of restoring normal strength and function to the affected body parts. For physical education majors only.

Semester Credits

HEd 534 *Modern Principles of Athletic Training* 2
A combined lecture and laboratory course designed to develop competence in training and conditioning.

HEd 540 *School Health Problems* 3
A course designed as in-service training to study the current school health problems by using the Case Technique Method. A wide variety of materials, methods, and resources will be utilized in working on these problems.
Prerequisites: One year's teaching experience or equivalent.

HEd 541 *School-Community Health Education Workshop* 3
A study of common problems in the home, community, and school health education areas. The five-point program follows: to provide in-service training in health education; to stimulate and promote an effective follow-up program in health services; to coordinate the efforts of allied health agencies; to stimulate and promote interest in local health units; and to develop an awareness of the place of mental health in the total health program of the home-school-community.

HEd 550 *Foundations and Principles of Health, Physical Education, and Recreation* 3
The basic approach to health, physical education, and recreation through the study of past and contemporary philosophies, principles, objectives, and trends.

HEd 551 *Seminar: Professional Literature in Health, Physical Education and Recreation* 3
A critical review of the current professional literature in both the major and related fields. Emphasis will center upon a broad review in terms of its application to teaching and research.

HEd 560 *Contemporary Problems in Health, Physical Education, and Recreation* 3
An overview of the problems in teaching health, physical education, and recreation with specific relationship to in-service aspects. Emphasis will be placed on the factors and variables which influence solutions to these problems.

HEd 561 *Statistics in Health and Physical Education* 3
The study of statistical and evaluative procedures and their application to the field of health, physical education and recreation.

HEd 562 *Administrative and Supervisory Practices in Health, Physical Education and Recreation* 3
The nature and extent of the positions of directors or supervisors of health, physical education and recreation. The job specifications will be defined and operational principles and procedures will be developed.

HEd 563 *Scientific Measurement and Instrumentation* 2
Experiences in measurement involving operation of laboratory equipment for research in physical education.

HEd 564 *The Biodynamics of Human Performance* 3
A study of that branch of physiology which relates to active, vital phenomena of the organism. The course emphasis will be on scientific findings concerning the study of human performance, especially under stress and accompanying physiological adjustments. It will include metabolism, nutrition and diet, cost of work, fatigue and rest, overweight, dehydration and environmental and climatic adaptation and ergogenics.

Semester Credits

HEd 570 *Curriculum Developments in Health and Physical Education* 3
Contemporary trends in health and physical education curricula at the elementary, secondary and college levels. Extensive surveys, reports, and analysis of curriculum practices will be applied to the construction of health and physical education programs.

HEd 571 *Comparative Physical Education — Contemporary Foreign Programs* 2
A comparative study of contemporary physical education programs in countries outside the United States. Particular emphasis will be placed upon current philosophy, principles and practices. Broad based resources in complete form and/or abstracts in both the foreign language and translations will be used. Available audio-visual resources will be reviewed. When the course is given in a foreign field trip, it shall carry from 3 to 6 credits.

HEd 572 *The Child and Physical Education* 3
The exploration of the potential contributions of physical education to the physical, social, emotional, and intellectual growth and developmental needs and interests of children. Ways and means of studying and evaluating the influence of the physical education activities (games, rhythmics, and self-testing activities) on the various aspects of growth and development will be considered.

HEd 580 *Contemporary Practices in Safety Education* 2
A course designed to evaluate and interpret research studies and practices affecting the teaching of safety education in schools and colleges.

HEd 591 *Thesis Seminar in Health, Physical Education and Recreation* 3-5
To be taken concurrently with the development of a thesis. (Admission by approval of major professor and the Director of Health, Physical Education, and Recreation.)

HEd 592 *Non-Thesis Seminar* 2

HEd 592-A *Non-Thesis Seminar I*
To be taken concurrently with the development and writing of the research report. (The student will be expected to select a topic and complete the first three chapters of the research report during this course.)

HEd 592-B *Non-Thesis Seminar II*
During this course the student will be expected to complete the entire research report.

HEd 593 *Thesis* 3

MATHEMATICS

Mat 500 *Methods and Materials of Research in Mathematics Education* 2
A course involving a study of the techniques of research in mathematics education. Included are an analysis of the various types of research, selection of a problem, selection of appropriate procedures and the formulation of a plan of investigation and report.

Semester Credits

Mat 501 *Fundamental Concepts of Mathematics I* 3

A course for the elementary teacher. It includes development of our number system, the base of a number system, and the role of the various types of numbers and operations in mathematics. The course stresses the meanings and understandings of the mathematics related to the elementary program.

Mat 502 *Fundamental Concepts of Mathematics II* 3

A continuation of Mat 501. Emphasis is placed upon the structure of the real number system. Basic concepts of geometry are also included for study.
Prerequisite: Mat 501

Mat 503 *History of Mathematics* 3

A course tracing the development of mathematics from the prehistoric to the present. This course involves a study of various areas in mathematics as well as the men responsible for the development.

Mat 505 *Theory of Sets* 3

A course in set theory and the foundations of mathematics. Included for study are sets, subsets, set operations, algebra of sets, equivalence relations and partitions, sets of numbers, cardinal numbers, Theorems of Cantor and Schroeder-Bernstein, continuum hypothesis, ordering in sets, and ordinal numbers.

Mat 511 *Foundations of Algebra* 3

A course in basic concepts in algebra. Beginning with the nature and structure of the number system, the course also includes sets and their use in algebra, mathematical systems in general, and an introduction to abstract algebra.

Mat 512 *Modern Algebra* 3

A standard course in abstract algebra. Various abstract algebra systems such as integral domains rings, fields, and groups are studied from an axiomatic point of view.

Mat 513 *Matrix Algebra* 3

A course in linear algebra. It includes matrices, determinants, their theory and application to systems of equations.

Mat 514 *Theory of Numbers* 3

A survey of the elementary arithmetic of the integers. The course includes properties of numbers, prime numbers, factorization, congruences and diophantine equations.

Mat 521 *Educational Statistics* 2

A course in statistics for teachers. The course includes measures of central tendency, deviation, correlation and tests of significance of results.

Mat 522 *Advanced Educational Statistics* 2

A continuation of Mat 521. It includes applications of various distributions, analysis of variance and covariance and multivariate analysis.

Mat 523 *Mathematical Statistics I* 3

A course involving the mathematical treatment of random phenomena and an introduction to statistics. Included for study are elementary concepts of probability, conditional probability, compound events, expectation, random variable, and elementary statistics.

Semester Credits

Mat 524 *Mathematical Statistics II* 3
A continuation of Mat 523 emphasizing the mathematical aspects of statistics. It includes correlation, sampling, tests of significance, analysis of variance and other topics.
Prerequisite: Mat 523.

Mat 531 *Foundations of Geometry* 3
A course in basic concepts in geometry. Beginning with fundamental notions covering point, line and plane, the course also includes statements in geometry, the structure of geometric systems, Euclidean geometry, and an introduction to non-Euclidean geometries.

Mat 532 *Modern Geometry* 3
A general foundations course in higher geometry. Beginning with a study of axiomatics and the structure of a geometric system, the course also includes Euclidean geometry from the standpoint of the Euclid and Hilbert postulates. Certain topics in projective and hyperbolic geometry are also investigated.

Mat 533 *Projective Geometry* 3
A course in the projective properties of various configurations. Among the topics included for study are projective theory of conics, duality, harmonic sets, cross ratio, Desargue's and Pascal's Theorems, poles and polar relationships.

Mat 535 *Topology* 3
An axiomatic approach to the basic notions of point set topology. The following topics are given a rigorous treatment: metric spaces, topological spaces, product spaces, transformations, completeness, compactness and separability.

Mat 541 *Advanced Calculus I* 3
A course in the foundations of real analysis. Included for study are a rigorous treatment of limits, continuity, derivatives, sequences and Riemann integrals.

Mat 542 *Advanced Calculus II* 3
Continuation of Mat 541. Included for study are functions of several variables, partial derivatives, implicit function theorems, transformations and multiple integrals.
Prerequisite: Mat 541.

Mat 543 *Differential Equations* 3
A course in the theory, solution, and application of ordinary differential equations. It includes differential equations of the first and second orders.

Mat 545 *Real Variable* 3
A course in real analysis. Included for study are the real number system, sets, order, theory of limits, continuity, derivatives and integrals.
Prerequisite: Mat 535 or Mat 542.

Mat 547 *Complex Variable* 3
A course in complex analysis. Included for study are the complex number system, analytic functions, differentiation and integration, expansions and conformal mapping.
Prerequisite: Mat 535 or Mat 542.

Semester Credits

Mat 550* *Modern Techniques of Teaching Secondary School Mathematics* 2
A course in methods of teaching modern mathematics. Includes the aims of instruction, motivation, teaching methods, and evaluation in the new mathematics. Modern courses of study are analyzed in terms of their content, philosophy, and objectives.

Mat 551* *Teaching Secondary School Mathematics to the Low Achiever* 2
A course in mathematics for the student of average general ability with a low achievement record in the subject. Emphasis is placed on the development and use of methods and materials which are effective with these students.

Mat 555 *Modern Techniques of Teaching Elementary School Mathematics* 2
A course in methods of teaching the new mathematics for the elementary grades. The content, philosophy, and objectives of modern elementary school courses of study are analyzed. Stress is placed on the development and use of methods and materials which are effective in the new mathematics.

Mat 556 *The Development of the Mathematics Curriculum in the Elementary Grades* 2
A course designed to develop the key teacher or coordinator for the modern elementary school mathematics program. The course examines the modern program, stresses curriculum development, develops meaningful scope and sequence, stresses articulation with the secondary mathematics program, examines testing programs, and defines and develops the role of the mathematics coordinator.

Mat 610 *Thesis* 3

MUSIC

Required Courses

Hum 500 *Seminar in the Humanities* 2
(See first page of V. COURSE OFFERINGS)

Mus 500 *Methods and Materials of Research* 2
(See first page of V. COURSE OFFERINGS)

Edu 510 *Seminar in Educational Foundations* 2
(See first page of V. COURSE OFFERINGS)

Mus 510 *Current Trends in Music Education* 2
Current principles and philosophy in music education in relation to modern educational philosophy and curriculum practices.
Prerequisite: Elementary and Secondary Music Methods.

Mus 588-589 *Research Seminar* 1-2

Elective Courses for Music Students

SECTION I: MUSIC EDUCATION

Mus 511 *Administration of Public School Music* 2
A consideration of administrative problems, curricular content scheduling, in service training of teachers, and supervisory planning will be included. Participants may bring in problems which have been encountered in the supervision and administration of public school music.
Prerequisite: Teaching experience.

* Depending upon Department of Public Instruction approval.

Semester Credits

Mus 512 *Music Education in the Secondary School* 2

This course deals with the general music class in the Secondary School with special emphasis on the problems in the Junior High School.
Prerequisite: Secondary Music Methods and Teaching Experience.

Mus 513 *Music in the Elementary School* 2

This course is planned for the music educator with emphasis upon problems, procedures, and materials and their practiced application in the Elementary class room.
Prerequisite: Elementary Music Methods and Teaching Experience.

Mus 514 *Pedagogy of Music Theory* 2

A study of the techniques and materials for use in teaching the various skills included in courses in music theory. Special emphasis will be placed on a harmonic review and theoretical instruction in the public schools. In addition, a comparative study of the work of outstanding theorists, past and present, will be included.

Mus 515 *Marching Band Techniques and Materials* 2

A detailed study of the Marching Band including organization, music, materials, care of instruments and uniforms, marching essentials and contemporary techniques.

Mus 516 *Piano Pedagogy* 2

A consideration of principles and procedures of piano teaching at all levels. Sound practice procedures, as well as the essentials of technique, style, and musicianship will be demonstrated through performance. Opportunity to teach and prepare criticisms will be provided.
Prerequisite: Teaching experience or evidence of sufficient pianistic background to profit from the course.

Mus 518 *Vocal Pedagogy* 2

A practical approach to the principles and techniques of teaching voice at all levels is presented. Stress is laid upon materials and procedures concerned with improving the tone quality of the individual and/or the group.
Prerequisite: Teaching experience or evidence of sufficient vocal background to profit from the course.

Mus 519 *Music Appreciation in the General Music Program* 2

A comprehensive study of the many different approaches to the development of musical understandings which stimulate a sincere appreciation of music. Particular emphasis is placed upon materials and their reflection in pupils' appreciative responses.

Mus 584 *Seminar in Piano Teaching and Teaching Materials* 2

A seminar giving in-service music teachers and supervisors the opportunity for class study of outstanding examples of the piano literature. The role and integration of the piano into the public school program along with suitable teaching materials for class and private study will be analyzed and used in demonstrations and student teaching.

Mus 585 *String Literature and Pedagogy* 2

This course is designed to give music teachers an understanding of the problems involved in teaching string classes. It is basically a study of techniques and methods required for the effective teaching of string classes.

Semester Credits

Mus 588-589 *Research Seminar* 1-2
The seminar is designed to help students carry out a variety of research activities. Emphasis is placed upon the development of research procedures, the presentation of progress reports or completed research, and tutorial work on form and style in research writing.

SECTION II. APPLIED MUSIC

a. Keyboard

Mus 541-545 *Advanced Piano or Advanced Organ* 1 or 2
Continued study in all phases of piano or organ performance through the literature from Bach to the contemporary period; opportunity for recital performance will be provided.
Prerequisite: 4 credits in piano or organ with performing experience.

Mus 546-549 *Piano Ensemble and Master Class* 1 or 2
Emphasis will be placed on the study and performance of accompaniment material, chamber music, and original works and arrangements for four-hands and two-piano combination. Both classical and contemporary literature will be considered. Rehearsal techniques in ensemble playing will receive stress.
Prerequisite: Pianistic ability at a level to function effectively in the class.

Mus 581 *Accompanying* 2
Designed to consider the principles and problems of accompanying by various types of accompanying experiences in the vocal and instrumental literature. Students are given practical experience in studio accompanying at all levels of difficulty.
Prerequisite: Sufficient pianistic background; 4 credits in piano.

b. Vocal

Mus 503 *Advanced Choral Conducting* 2
Discussion, study, and practical application of choral conducting techniques involved in the performance of the music of the various schools of choral writing, sacred and secular.
Prerequisite: Choral conducting.

Mus 531-535 *Advanced Voice* 1 or 2
Continued study in all phases of vocal techniques. Development of repertoire from as many schools as possible including widely contrasting styles for use in church and recital. A voice major should give a recital of three or four groups of songs.
Prerequisite: 4 credits in voice and performing experience.

Mus 536-537 *Vocal Ensemble and/or Chorus* 1
Participation in the preparation of choral and/or ensemble programs for concert performance.
Prerequisite: Chorus experience equivalent to the undergraduate requirement for chorus; sufficient voice and reading ability to profit by extensive work in this area of participation.

Mus 538-539 *Opera Workshop* 2
A practical study of the technique of producing musical stage plays. Covers study of music and action only. Includes preparation of roles, coaching, conducting rehearsals, and possible public performance. Participants engage in singing, accompanying, directing, etc., as needed to supply the experience.

Semester Credits

Mus 586-587 *Vocal Diction (two semesters)* 2 or 4
First semester — English, Italian and Latin Diction.
A laboratory course to establish correct pronunciation in singing English, Italian and Latin with practice in the use of the phonetics of these languages in selected standard song repertoire.
Second Semester — French and German Diction.
The study of French and German as applied to singing and the requirements of correct pronunciation through the use of the phonetics of these languages in selected standard song repertoire.

c. Instrumental

Mus 501-502 *Advanced Class Instruction in Instruments* 1
This class is offered to students who wish to become familiar with the playing and teaching techniques of the orchestra and band instruments.
Prerequisite: Violin, Clarinet, Trumpet.

Mus 504 *Advanced Instrumental Conducting* 2
Study and practice of the problems involved in conducting more advanced music literature. Developing the ability to read and conduct full scores of works involving larger orchestra than used in undergraduate work.
Prerequisite: Instrumental Conducting.

Mus 561-565 *Advanced Instruments* 1 or 2
Continued study of all phases of technique in relation to the performance of the instrument's repertoire; opportunity for recital performance will be provided.
Prerequisite: 4 credits in instruments and performing experience.

Mus 566-569 *Ensemble and/or Orchestra or Band* 1
Participation in preparation of programs for concert performance.
Prerequisite: Experience equivalent to the undergraduate requirement.

SECTION III. STRUCTURE AND ORGANIZATION OF MUSIC

Mus 521 *Sixteenth Century Counterpoint* 2
The use of modes, musica ficta and cadences in sixteenth century music. Experience will be provided in imitation in two parts using all note values, double counterpoint, the pronunciation and setting of Latin texts.

Mus 522 *Advanced Composition and/or Orchestration* 2
Creative work in various forms.
Prerequisite: A knowledge of the instruments of the orchestra and experience in their use in original composition.

Mus 523 *Advanced Band Arranging* 2
Emphasis is placed on arranging for the high school band. Consideration is given to Bands with inexperienced players and limited instrumentation. Students will have the opportunity to hear their arrangements performed.
Prerequisite: Orchestration or Teaching experience.

Mus 528 *Twentieth Century Musical Styles* 2
A theoretical study of the techniques of representative contemporary composers. Emphasis is placed upon the compositional techniques used and includes the study of harmony and form as these bear upon the problems. Creative work in the styles of the composers studied will be attempted.

Semester Credits

Mus 582 *Advanced Musical Form* 2
The detailed study of musical form with special emphasis on the modifications of sonata form; the forms of Baroque music, vocal and instrumental; and the Unique forms.

SECTION IV. LITERATURE AND HISTORY OF MUSIC

Mus 505 *Contemporary Music* 2
A study of the techniques and artistic movements of the 19th century necessary for the understanding of contemporary music. Musical styles and techniques of the 20th century will be studied utilizing recordings, performances, scores, periodicals, etc. Individual composers will be discussed along with the analysis of selected works. The contribution of America to the contemporary musical scene will be emphasized.

Mus 506 *Instrumental Literature* 2
Instrumental materials for public school groups at all levels are discussed and evaluated. Program building and music for special programs are emphasized. Actual performance and recordings are used when possible.
Prerequisite: Instrumental methods and performing experience.

Mus 507 *Vocal Literature* 2
A course designed to meet the needs of students, artists, and teachers giving them a performing and teaching command of representative song repertoire and program building. Material includes classic song literature, lieder, modern songs, and arias from standard operas and oratorios illustrated by performance of and by records, members of the class, and the instructor.
Prerequisite: 4 credits in voice and performing ability.

Mus 508 *Choral Literature* 2
A study of the music used for purposes of choral ensemble through the course of the history of music as an art. Study by participation in actually singing of the material, and by research into some single phase elected by the student with the approval of the professor.

Mus 509 *Piano Literature* 2
A course designed to meet the needs of the performing students, teachers, through the medium of records, discussion and performance of great piano literature.
Prerequisite: Performing experience.

Mus 525 *Woodwind Literature* 2
A comprehensive evaluation of materials for solos and ensembles through actual performance and the use of recordings forms the basis for this course.
Prerequisite: Performing experience.

Mus 526 *Brass Literature* 2
A comprehensive evaluation of materials for solos and ensembles through actual performance and the use of recordings forms the basis for this course.
Prerequisite: Performing experience.

Mus 527 *History of the Opera* 2
Detailed study of the composers and their major contributions to the opera movement.
Prerequisite: 6 credits of History of Music.

Semester Credits

Mus 583 *Music in the Baroque Period* 2

A historical and appreciative study of music from 1600 to 1750, with special attention to stylistic and formal developments; significant trends and their relationship to general history and subsequent evolution of the art; some biographical study including Bach and Handel. Outside reading, research papers and classroom discussion required.

Mus 591 *Music in the Romantic Era* 2

This is a course in musicology concentrating on the developments in music during the Romantic Period, roughly between 1800-1900. It analyzes the changes and trends that took place, and presents the new forms in their comparative aspects. The course deals with ideas and movements, and presents composers and their works as they pertained to objectives and understandings.

SECTION V.

Elective Courses for All Students

Mus 520 *Instrument* 1

Mus 530 *Voice* 1

Mus 540 *Piano* 1

Mus 550 *Organ* 1

Students in any curriculum may elect to study an instrument, voice, piano, or organ and receive credit upon demonstration of satisfactory progress. One individual lesson each week.

Mus 560 *Study and Appreciation of the Opera* 2

Hearing and studying the opera from its origin to the present. Works from Monteverde to Gluck to Briten, Menotti, and Stravinsky will form the "repertoire" of this course. Greater emphasis will be placed on the most significant contributors to the development of the opera.

Mus 571 *Music Criticism and Aesthetics* 2

Exercises in writing musical criticism and essays will be undertaken. Aesthetic concepts of different eras will be discussed.

Mus 590 *Study and Appreciation of The Symphony* 2

An elective course open to music majors and students from other departments and fields of interest. A course presenting the musical forms and literature of the symphony in an intelligible, stimulating, and enjoying way. The course evaluates the basic instrumental forms which directly influence the development of the symphony and follows a comparative growth and expansion through the contemporary period in music. Paramount in the course is the non-technical approach to analysis and the development of meaningful listening procedures for a representative number of carefully chosen compositions from the standard literature for the symphony.

Elective Courses for Elementary Education Students

Semester Credits

Mus 572 *Vitalizing Music in the Elementary School* 2
A course planned primarily for elementary teachers. It aims to prepare them to teach more effectively and to enrich the program of Music Education in the schools. This will be brought about through study of the various series of song and rhythm materials currently available for use in elementary schools. It will develop the basic knowledge of simple instruments such as the xylophone, autoharp, and percussion.

Mus 573 *Keyboard Activities for the Classroom Teacher* 2
Designed primarily for the elementary classroom teacher through a functional study of the piano. Grasp of fundamental principles of accompanying classroom singing, rhythmic and creative activities by studying and performing practical classroom materials.

Mus 574 *Teaching of Music Appreciation in the Elementary Grades* 2
A course designed for elementary teachers. It aims to provide suitable and available materials from which units of study for a specific grade are organized for the purpose of enriching the music program. Emphasis is placed upon the use of audio-visual materials.

PHYSICAL SCIENCE

PSc 500 *Philosophy of Science* 3
Ethical and social implications of modern science and technical skills. The course will deal with scientific methods of inquiry, choice of experimental techniques, and logical interpretation of results.
Prerequisites: Completion of an undergraduate major field in one or more of the sciences.

PSc 501 *Historical Geology* 3
The history of plant and animal life on our planet, as shown in the record of the rock formations. Field trips to visit museums as well as laboratory experiences in the study of living forms and fossils will aid graduate students in the comprehension of the great literature of paleontology.
Prerequisite: Completion of an undergraduate field in biological science or general science or the equivalent.

PSc 502 *Modern Trends in Teaching Physical Science* 2
An introduction to the newest materials and techniques in high school physics.
Prerequisite: One year teaching experience in physics.

PSc 503 *Principles of Physical Geology* 3
The examination of minerals and rocks will permit the student to understand the composition of the earth. In order to comprehend earth processes the mechanics of weathering, erosion, volcanism, and diastrophism will be discussed. Geologic and topographic maps and aerial photos will be examined and interpreted in order to understand geologic features.

PSc 506 *Seminar in Physical Science* 1
Topics vary from year to year depending upon the background and interest of the students.
Prerequisite: Three graduate courses in physical science.

Semester Credits

PSc 507 *Recent Advances in Physical Science* 3
A consideration of selected current developments in physical science including their scientific significance and social or economic implications. Open to all students in the Graduate School.

PSc 508 *Nuclear Physics for Teachers* 3
A discussion of nuclear reactions, radioactivity, and aspects of nuclear structure.
Prerequisite: Physics I and II. One course in Modern Physics.

PSc 510 *Electronics for Teachers* 3
Electronic circuits using either vacuum tubes or solid state devices are analyzed, constructed, and tested. Topics included are rectification, amplification, oscillation, and selected test circuits. Two hours lecture and two hours laboratory.
Prerequisite: Physics I and II.

PSc 511 *Electricity for Teachers* 3
An analysis of the principles of electricity and electromagnetism.
Prerequisite: Ability to use differential and integral calculus. Physics I and II.
Two hours lecture and two hours laboratory.

PSc 512 *Mechanics for Teachers* 3
Mathematical analysis of dynamics and statics.
Prerequisite: Ability to use differential and integral caculus. Physics I and II.

PSc 513 *Modern Physics for Teachers* 3
An introductory study of 20th century contributions and ideas including special relativity, quantum theory, atomic structure, and solid state structure.
Prerequisites: Two semesters of general physics.

PSc 521 *Mineralogy for the Science Teacher* 3
Properties and occurrence of the common and industrially important minerals and their identification in the laboratory. Strategic and critical minerals and the relationship between mineral resources, national development and security will be studied.
Prerequisites: Two semesters of Inorganic Chemistry.

PSc 524 *Experimental Physics* 1-3
A study of classical experiments in modern and atomic physics. There will be some library study and some laboratory study of these experiments. Experiments selected will vary depending upon the background and interest of the students.
Prerequisites: A course in atomic or modern physics.

PSc 532 *Space Science* 3
Selected topics from astronomy and related sciences. The major emphasis is upon the problems of exploring the universe beyond Earth's atmosphere and typical results that are being obtained. Open to all students in the Graduate School.

PSc 560 *Workshop in Rocks and Minerals* 3
The most common rocks and minerals will be examined, and their significance will be discussed. Simple classroom methods that help in the identification of rocks and minerals will be demonstrated. Elementary explanations as to the origin and relation of the common rocks and minerals will be presented. This workshop will give the elementary teacher a cursory knowledge of the rocks and minerals that are most likely to be found by students.

Semester Credits

PSc 562 *General Geologic Field Studies in Southeastern Pennsylvania* 3
Field areas in southeastern Pennsylvania will be visited in order to study the occurrence and relationships of minerals, rocks, and other surface features. Field techniques will be demonstrated so that the student can describe, map, and interpret the phenomena he sees in the field.

PSc 590 *History of the Physical Sciences* 3
Developments from Aristotelian concepts to those established by modern scientific methods. Emphasis will be placed on the role of discoveries in the physical sciences in the development of great nations.
Prerequisites: Two semesters of Inorganic Chemistry or two semesters of College Physics.

Che 541 *Selected Topics in Physical Chemistry* 3
This course is designed exclusively for teachers of chemistry. The properties of the states of matter, elements of chemical thermodynamics, theory of solutions, electro-chemistry, chemical equilibrium and chemical kinetics will be included.
Prerequisites: Integral Calculus, General Chemistry, General Physics.

PHYSICS*

Phy 501 *Introduction to Theoretical Physics* 3
Usually required as the first course for graduate physics students. A mathematical treatment of selected topics in theoretical physics. The harmonic oscillator, planetary motion, kinetic theory of gases, statistical mechanics, plasma physics.
Prerequisite: Qualification for admission to the graduate program.

Phy 505 *Modern Trends in Physics Teaching* 2
A critical study of the philosophy, techniques, subject matter, and effectiveness of current secondary school physics courses. These will be examined in relation to the changing character of American society and technology.

Phy 506 *Analytical Mechanics* 3
An advanced study of classical mechanics. Variational principles, La Grange's equations, two-body central force problem, the kinematics and equations of motion of rigid bodies, Hamilton-Jacobi theory, special relativity.
Prerequisite: Physics 501.

Phy 513 *Electromagnetic Theory I* 3
Solution of problems in electrostatics, boundary value problems; Electrostatics of microscopic media, dielectrics; magnetostatics; time-varying fields, Maxwell's equations, electromagnetic waves.
Prerequisites: Physics 501 and Mathematics 542.

Phy 531 *Modern Physics* 3
A study of modern developments in physics. Atomic and kinetic theory, the electron, atomic structure and spectra, X-rays, natural radioactivity, induced nuclear transformations, high energy nuclear processes.
Prerequisite: Admission to graduate program in physics.

*Depending upon Department of Public Instruction approval.

Semester Credits

Phy 532 *Electromagnetic Theory II* 3
Wave guides and resonant cavities; radiation; magnetohydrodynamics; special theory of relativity; relativistic-particle kinematics and dynamics, radiation damping.
Prerequisite: Physics 513.

Phy 533 *Statistical Mechanics* 3
Generalized canonical formulations of qantum statistics; applications to various thermodynamical systems; irreversible processes.
Prerequisite: Physics 501.

Phy 541 *Quantum Mechanics I* 3
Historical Origins; wave packets and the uncertainty principle; the Schroedinger equation, applications; operations and eigenfunctions; the hydrogen atom.
Prerequisites: Physics 506 and Physics 551.

Phy 542 *Quantum Mechanics II* 3
Theory of scattering; matrix mechanics, angular momentum and spin; perturbation theory.
Prerequisite: Physics 541.

Phy 551 *Mathematical Physics* 3
A study of the mathematics needed in modern physics; Calculus of Variations, Boundary-value problems by separation of variables; Green's function; integral transform methods; complex variables; contour integration.
Prerequisites: Mathematics 541 and 542.

Phy 581 *Thesis* 3

Phy 591 *Seminar* 1
A presentation of written and oral reports by the students on problems and topics of current interest in Physics. It may be repeated for additional credit, using different topics.
Prerequisite: Consent of the Department.

SOCIAL SCIENCE

GROUP I AMERICAN HISTORY

His 510 *Colonial and Revolutionary America: 1607-1783* 2
A study of English colonization of North America; the relations of the colonies to the mother country; the political, economic, social and cultural developments of these colonies; the causes of the Revolution; and the struggle for independence culminating in the Peace of Paris of 1783.

His 511 *The Rise of the New Nation: 1783-1850* 2
An intensive study of the growth of the new nation with emphasis upon the problems of emerging federalism, the development of the constitutional foundations of the republic, the rise of the Federalist Party, the emergence of Jeffersonian Democracy, the evolution of Jacksonian Democracy and the events of the middle period leading to the decade of controversy. The concepts of nationalism, sectionalism and democracy are especially examined.

Semester Credits

His 512 *Civil War and Reconstruction: 1850-1876* 2
Study of the conflict between North and South from the Compromise of 1850 through the disputed election of 1876. Among problems considered are the intensification of the sectional struggle, secession, major wartime problems of the Union and the Confederacy, principal military campaigns, the Reconstruction Era and the efforts to create a new Union. The significance of the Civil War and Reconstruction in American History is especially emphasized.

His 513 *Emergence of Modern America: 1876-1919* 2
Covers the rise of industry, labor, immigration, and new cultural patterns. Coupled with this is the emergence of new political alignments, the rise of imperialism, and the development of liberalism and reform. America's struggle for neutrality and participation in World War I complete this area of study.

His 514 *The United States as a World Power: 1919-Present* 2
A study of America's development as a world power. It deals with the impact of industrialization upon society, politics, and economics; the problems of the war and post-war periods; and the work of our nation toward world unity. Emphasis is placed on the immediate background of current affairs.

His 515 *Problems in American Constitutional Development* 3
Selected problems in the development of American constitutional government. Emphasis is on the progressive adaptation of the law to a changing social and economic order. Such conflicts as nationalism versus states rights and vested rights versus police power are investigated.

His 516 *Recent American Diplomatic History* 2
A study of American foreign policy in Europe, Asia, Latin America, and the Middle East from 1939 to the present. In each area of study there is presented the objectives sought by the United States and the political, military, economic, and social policies it pursued in an attempt to achieve these objectives. Special detail is given to two fundamental issues on which free-world survival depends — the nature of our military strategy and the future of underdeveloped countries.

His 550A *Seminar in American History* 2
Selected problems in American History for research. Open to graduate majors who have had Ssc. 500 and two courses from Group I. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

GROUP II: EUROPEAN HISTORY

His 530 *Problems in Medieval Civilization* 3
The course will concentrate on major facets of Medieval life, with particular emphasis on the late Medieval period. Such topics as feudalism (its origins and causes for decline), the sources and growth of national monarchies, urban life, Medieval christianity, and Medieval philosophy, will be stressed. Every effort will be spent to give the student and understanding, in depth, of the Medieval outlook and way of life.

His 531 *The Renaissance* 2
Emphasis will be placed on causes of the Renaissance, as well as on Humanism and religious trends during the period. The political, military and economic developments of the age will be stressed as laying the foundations for modern Europe, as well as the great artistic and intellectual achievements. Although special attention will be given to Italian contributions, the Northern Renaissance will also be thoroughly covered.

Semester Credits

His 532 *The Protestant Revolution* 2
A consideration of the major and minor Protestant leaders and the movements they founded; the effects of these on the evolving nation-states; the Church of Rome's response; the Wars of Religion and the Treaty of Westphalia; the Scientific Revolution.

His 533 *Dynastic Europe: 1648-1789* 2
The absolute dynastic monarchy as best exemplified by France, Prussia and Russia; the middle-class challenge as typified by the English experience; the Enlightenment and the New Science; capitalism, colonialism, and the wars of empire.

His 534 *The French Revolution and the Napoleonic Era: 1789-1815* 2
A study in depth of the causes of the French Revolution, the failure of absolutism, the Reign of Terror, the Directory; the rise of Napoleon Bonaparte, his contribution to the Revolution, the Empire — its rise and collapse; the Congress of Vienna.

His 535 *Nationalism and Democracy: 1815-1914* 2
The course will emphasize the aftermath and effect of the French Revolutionary era, with particular attention to the events brought on by the growth of nationalism and democracy, and to those occasioned by the development of the industrial revolution. Toward the end of the period, the roots of the First World War, arising from the events and trends, will be examined.

His 536 *Europe Since 1914* 2
A study of twentieth century Europe with emphasis on the causes of World War I; the problems of Europe between World War I and World War II; and the problems of contemporary Europe.

His 540 *The Evolution of Modern Russia* 3
A study of the political, social, cultural and economic developments of Modern Russia; the conflict between East and West; the overthrow of Tsardom; the emergence of the Soviet Union; Soviet Communism; and the Soviet Union's role in the present world.

His 541 *Tudor and Stuart England* 2
Social, cultural, religious, political and economic developments during the Tudor and Stuart reigns: building a strong Tudor monarchy, English Reformation, Stuart Absolutism; Puritan Revolution, Civil War and the Commonwealth, the beginning of Empire; the Restoration, the Glorious Revolution and growth of English constitutionalism.

His 550B *Seminar in European History* 2
Selected problems in European History for research. Open to graduate majors who have had Ssc. 500 and two courses from Group II. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

GROUP III: SOCIAL SCIENCES

A: ANTHROPOLOGY-SOCIOLOGY

Ant 530 *Problems in Anthropology* 3
An intensive survey of several of the major aspects of both Physical and Cultural Anthropology. Emphasis will be placed on topics suitable for discussion and study in the elementary and secondary curricula. Some background in Anthropology is recommended, but is not required.

Semester Credits

Ant 550 *Seminar in Anthropology* 2
Selected problems in Anthropology for research. Open to graduate majors who have had Ssc. 500 and two courses from Group III. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

Soc 531 *Social Pathology* 3
A study of cultural patterns defined by society as undesirable. Analysis of the role of social science principles relating to the functioning of the family, education, and the state in modern society. Pathological patterns in the economic, educational, and political life resulting in social disorganization.

Soc 532 *Historical Sociology* 3
A study of the history of social thought from early primitive beginnings to recent contemporary times. It makes use of social thought in Europe and America. Emphasis is given to a survey of the work and personalities of outstanding American sociologists projected on the background of social theory and research.

Soc 533 *Intergroup Relations* 3
A study of the social processes and specific concepts relative to groups with emphasis upon conflict; interaction group behavior and related areas will be the major interests for study, with the sociological principles of social awareness and prevention given considerable attention in the course.

Soc 550 *Seminar in Sociology* 2
Selected problems in Sociology for research. Open to graduate majors who have had Ssc. 500 and two courses from Group III. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

B. ECONOMICS

Eco 530 *Economics and Public Policy* 3
The principles and methods of economic analysis are applied to an evaluation of the performance of the economic system. Alternative public policies to deal with important economic problems are assessed and compared. Specific topics considered include inflation, recession, and economic growth; problems of public finance and taxation, and public policy with regard to the concentration of economic power.

Eco 531 *Comparative Economic Systems* 3
A study of major forms of economic organizations with particular emphasis on those existing today. The course is presented so as to contrast the structure of capitalism, socialism, communism and fascism.

Eco 532 *History of Economic Thought* 3
The historical evolution of the major economic doctrines; mercantilists and cameralists; physiocrats; Adam Smith and the classical school; the historical school; the Austrian school; Alfred Marshall and the neoclassicists.

Eco 550 *Seminar in Economics* 2
Selected problems in Economics for research. Open to graduate majors who have had Ssc. 500 and two courses from Group III. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

C. POLITICAL SCIENCE

Semester Credits

Psc 531 *Modern Political Theory* 3

Critical analysis of enduring political problems, primarily in the writings of European theorists from Machiavelli to the present; an analysis of the basic concepts of political science; and theories concerning the proper role of the State in society.

Psc 532 *Seminar in International Relations* 3

A study of the factors which motivate the actions of nations on the contemporary international scene; with special emphasis on the machinery which members of the nation-state system have evolved for giving effect to their various policies. The methods of diplomacy, international law, and international organization are stressed.

Psc 533 *The American Legislative Process* 3

An examination of the legislative process in the United States with special emphasis placed upon the executive-legislative relationship. Critical attention is directed to the changing role of the legislature in America's balanced government.

Psc 540 *Institute on Democracy and Totalitarianism* 4

The course is designed to develop well reasoned knowledge of the political principles and philosophy underlying both democracy and totalitarianism. Emphasis is placed on the modern configuration of these two developing lines of political thought and practice. The course is constructed to ensure maximum student participation in analysis of these modern theories of political organization.

Psc 550 *Seminar in Political Science* 2

Selected problems in Political Science for research. Open to graduate majors who have had Ssc. 500 and two courses from Group III. Announcement of the proposed subject will be made in advance of each seminar. Seminar may be used as the supporting elective for the departmental thesis or research report.

GROUP IV: SPECIAL STUDIES

Eco 533 *Teaching Economics in Secondary Schools* 2

This course is designed for teachers of economics in the secondary schools. Major importance is attached to the development of basic principles of economic reasoning and analysis. Methods by which these principles can be taught are studied and discussed, and teaching materials and aids are evaluated. Attention is especially given to suggested procedures and resources for a minimum course in economics in the secondary school.

His 523 *Contemporary World Affairs* 2

An analysis of the causes of the cold war between the U.S.S.R. and the United States and the Western Democracies; contemporary efforts to realize peaceful coexistence of the democracies with the Communist dictatorships; and the impact of the nationalist movements of the peoples of Asia and Africa on contemporary world politics.

His 524 *Cultures of the Non-Western World* 3

A study of the political, economic, institutional, and cultural growth of Africa, India, Southeast Asia, and the Far East. Emphasis is placed on the comparisons and contrasts between these regions and the rest of the world. Special attention is given to recent interpretations of the many new aspects of Asian and African culture.

Semester Credits

His 526 *Workshop in World Cultures* 2

A workshop for teachers-in-service who are assigned to teach World Cultures in the secondary schools of Pennsylvania. The objective of the workshop is to provide an opportunity to study the western and non-western cultures through the use of resource persons and faculty; through research in recent reference materials; and through consultation with representatives of cultural regions.

Ssc 500 *Methods and Materials of Research in the Social Sciences* 2

Designed to acquaint the student with the basic techniques and procedures in research, this course treats with the major types of research and the methods for locating, evaluating, and interpreting evidence. Each student develops a tentative outline, bibliography, and summary of investigative procedure for a thesis or research report that must be completed before graduation. A study in historiography and the development of the social sciences are also presented as background material for this course.

Ssc 502 *Methods and Materials for Teaching Social Studies* 2

The course is designed to acquaint teachers with current practices and procedures in the Social Studies field with emphasis upon organization and planning; the use of classroom, library, and curriculum materials; testing, measurement, and evaluation; and bibliographical sources for both teachers and students.

Ssc 550 *Seminar in Contemporary European Culture* 6
(Student European Tour)

A fully guided tour of Europe with visits to important areas of the major countries. The tour is organized as a seminar with a number of orientation discussions before departure. Opportunity will be provided for questions and discussion periods en route. An annotated diary of the tour will be required from each student, plus a paper in which the student will be encouraged to do individual research on some particular facet of the tour which interests him. Every summer.

Ssc 600 *Research Report* 2

The research report maintains the same form of reporting results as the thesis, but a research report has a greater degree of brevity and a more narrow scope. Also, the report is limited mainly to secondary sources that can be found in libraries and historical societies close at hand. Mainly the aim of the research report is to give the student practice in research techniques and methods of reporting the results.

Ssc 610 *Thesis* 3

The thesis differs from the research report mainly in three aspects: it is of larger scope, it must contain primary sources (as well as secondary), and it must develop arguments to support a proposition or theory. A thesis also tries to bring forth new information. It is permissible to deal with a thesis topic that has been developed in some earlier investigation, *provided* the recent researcher, covering old ground, presents a new interpretation of the information or new evidence that is significant.

Supporting Elective

The graduate student must take course work in fields of study necessary to augment his background for work on his thesis or research report. If the thesis or research report is in the realm of colonial history, for example, his supporting elective must be in Colonial History. The elective might be in another department, but only if the thesis or research report subject warrants this. A thesis or research report in colonial literature for example, would be supported by a course in American Literature.

COURSE OFFERINGS OPEN TO ALL CURRICULA

Below is a list of elective courses open to all curricula. Each curriculum provides an option to the graduate student whereby he may take at least six hours of graduate work outside his major field of concentration, provided he has met the prerequisites.

BIOLOGY

			Semester Credits
Bio	545	Developmental Anatomy	3
Bio	561	Human Heredity	3

EDUCATION

Edu	502	Secondary School Curriculum	2
Edu	506	The Junior High School	2
Edu	508	The Core Curriculum	2
Edu	509	Contemporary Teaching Trends	2
Edu	520	Comparative Education	3
Edu	525	The Teacher and Administrative Leadership	2
Edu	526	Programmed Instruction	2
Edu	528	The Production of Projected Still Materials	3
Edu	529	The Production of Non-Projected Materials	3
Edu	530	Selection and Effective Utilization of Instructional Materials	3
Edu	532	Photography for Teachers	3
Edu	533	Television in Education	3
Edu	534	Seminar in Instructional Materials	2
Edu	535	Organization and Administration of the Audio-Visual Program	2
Edu	540	In-Service Education Seminar	2
Edu	541	Creative Teaching	2
Edu	542	Curriculum Development for Culturally Disadvantaged Children	2
Edu	550	Advanced Educational Psychology	3
Edu	566	The Activity Program in the Secondary School	2
Edu	580	History and Philosophy of Education	3
Edu	581	The Motion Picture in Education	2
Edu	590	School Law	2
Gui	500	Principles and Techniques of Guidance	2
Gui	564	Homeroom Guidance	2
Gui	567	Group Guidance	2
Gui	570	Principles and Techniques of Interviewing & Counseling	2
Psy	554	Group Dynamics	2
Psy	557	Psychology of Adjustment	2
Psy	562	Psychology of Personality	2

ENGLISH

			Semester Credits
Eng	502	History of the English Language	2
Lit	511	English Literary Criticism (1800-1920)	2
Lit	523	Eighteenth Century Novel	2
Lit	524	British and Continental Short Story	2
Lit	525	Biography	2
Lit	529	Victorian Prose	2
Lit	532	Advanced Shakespeare	2
Lit	535	Twentieth Century American Writers	2
Lit	541	Greek and Roman Literature in Translation	2
Eng	543	Advanced Problems in Public Speaking	2
Eng	550	Literature for Elementary School	2

GEOGRAPHY

			Semester Credits
Geo	501	Geomorphology	3
Geo	503	General Climatology	3
Geo	523	Advanced Conservation of Natural Resources Workshop	3
Geo	528	Concepts of Modern Global Geography	3
Geo	529	Geographic Influences in World History	3
Geo	540	Geography of the United States	3
Geo	541	Geography of the United States in its World Relations	3
Geo	543	Geography of Mexico and Middle America	3
Geo	544	Geography of South America	3
Geo	545	Geography of Europe (Excluding the U.S.S.R.)	3
Geo	587	Geography Workshop for Teachers	3

(Other courses by approval of the Geography Department)

HEALTH AND PHYSICAL EDUCATION

			Semester Credits
HEd	502	Elementary Physical Education Workshop	2
HEd	503	Advanced Aquatics	2
HEd	504	Dance in Education	2
HEd	510	School and Community Recreation	2
HEd	512	Outdoor Education Workshop	2
HEd	520	Advanced Coaching	3
HEd	532	Modified Physical Education	2
HEd	540	School Health Problems	3
HEd	541	Community-School Health Education Workshop	3

MUSIC

			Semester Credits
Mus	560	Study and Appreciation of the Opera	2
Mus	571	Music Criticism and Aesthetics	2
Mus	590	Study and Appreciation of The Symphony	2
Mus	591	Music in the Romantic Era	2

PHYSICAL SCIENCE

			Semester Credits
PSc	507	Recent Advances in Physical Science	3
PSc	532	Space Science	3
PSc	560	Workshop in Rocks and Minerals (Elementary School Teachers)	3

SOCIAL SCIENCE

			Semester Credits
Ssc	550	Seminar in Contemporary European Culture (Student European Tour)	6
His	524	Cultures of the Non-Western World	3
His	526	Workshop in World Cultures	2
Ant	530	Problems in Anthropology	3
Eco	530	Economics and Public Policy	3
Psc	533	The American Legislative Process	3
Soc	531	Social Pathology	3

FOR STUDENTS WHO HAVE HAD His 211:

His	510	Colonial and Revolutionary America: 1607-1783	2
His	511	Rise of the New Nation: 1783-1850	2
His	512	Civil War and Reconstruction: 1850-1876	2

FOR STUDENTS WHO HAVE HAD His 212:

His	513	Emergence of Modern America: 1876-1919	2
His	514	United States as a World Power: 1919-present	2
His	516	Recent American Diplomatic History	2

FOR STUDENTS WHO HAVE HAD His 101-102:

His	523	Contemporary World Affairs	2
His	530	Problems in Medieval Civilization	3
His	531	The Renaissance	2
His	532	The Protestant Revolution	2
His	533	Dynastic Europe: 1648-1789	2
His	534	The French Revolution and Napoleonic Era: 1789-1815	2
His	535	Nationalism and Democracy: 1815-1914	2
His	536	Europe Since 1914	2
His	540	The Evolution of Modern Russia	3
His	541	Tudor and Stuart England	2

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WEST CHESTER STATE COLLEGE

WEST CHESTER, PENNSYLVANIA 19380

APPLICATION FOR ADMISSION TO GRADUATE STUDY

(Please complete and return to Graduate Office)

INSTRUCTIONS: This application form and two official undergraduate transcripts should be filed with the Graduate School prior to registration for the term in which the applicant expects to enter. **THIS APPLICATION MUST BE ACCOMPANIED BY AN APPLICATION FEE OF $10.00 (NOT REFUNDABLE). It should be a cashier's check or a money order, drawn to THE COMMONWEALTH OF PENNSYLVANIA.** If the applicant plans to transfer graduate credits from another college or university, he should also submit two official transcripts of these courses. Notification of acceptance will be sent after all the required transcripts of previous college courses have been received and evaluated. Consult the current Bulletin of Graduate Studies for dates of the period of registration.

After this application form and transcripts have been submitted to the Graduate Office, the applicant should arrange for a personal interview with the Dean of Graduate Studies.

1. Name in full ..... (Last name) (First name) (Middle name)
2. Maiden name ..... (Last name) (First name) (Middle name)
3. Present address ..... (Street) (City) (Co.) (State) (Telephone)
4. Permanent address ..... (Street) (City) (Co.) (State) (Telephone)
5. Place of birth ..... Date of birth ..... (Month) (Day) (Year)
6. Present position .....
7. When do you plan to begin graduate study at this College?
8. Are you planning to study full or part time?
9. What is your ultimate purpose (degree candidacy, certification, etc.) in taking graduate courses at WCSC? .....
10. List the secondary school and all colleges in which you have enrolled:

Name of School	Location	Dates Attended	Date of Graduation	Degree
a. Secondary school				
b. Colleges or Universities Undergraduate Study				
c. Colleges or Universities Graduate Study				
Undergraduate Major		Graduate Major		

(See Other Side)

11. List any physical handicaps or health problems .....

.....

Will these affect your class attendance? .... If so, to what extent?

.....

12. Teaching experience .....

Place .... Dates ..... State ..... Co. .....

Position held or subjects taught .....

.....

.....

13. Have you ever been dismissed or disqualified from any other institution of higher learning? Yes ..... No ..... Institution .....

14. Are you now doing work in any other colleges or universities?

Yes ..... No..... If your answer is yes, name the course .....

..... Institution .....

15. Name the teaching certificate (s) or administrative certificate (s), if any, you now hold: .....

Issued in what state? .....

16. Are you matriculated at another college or university .....

Name and Address of college or university .....

17. Do you expect to use G. I. benefits to help pay the costs of this program.

Yes ..... No.....

18. Give the names and addresses of three qualified persons who can be used as references.

Name	Address	Occupation

Date Signature of Applicant

Remarks (To be filled by Dept. chairman) .....

.....

.....

.....

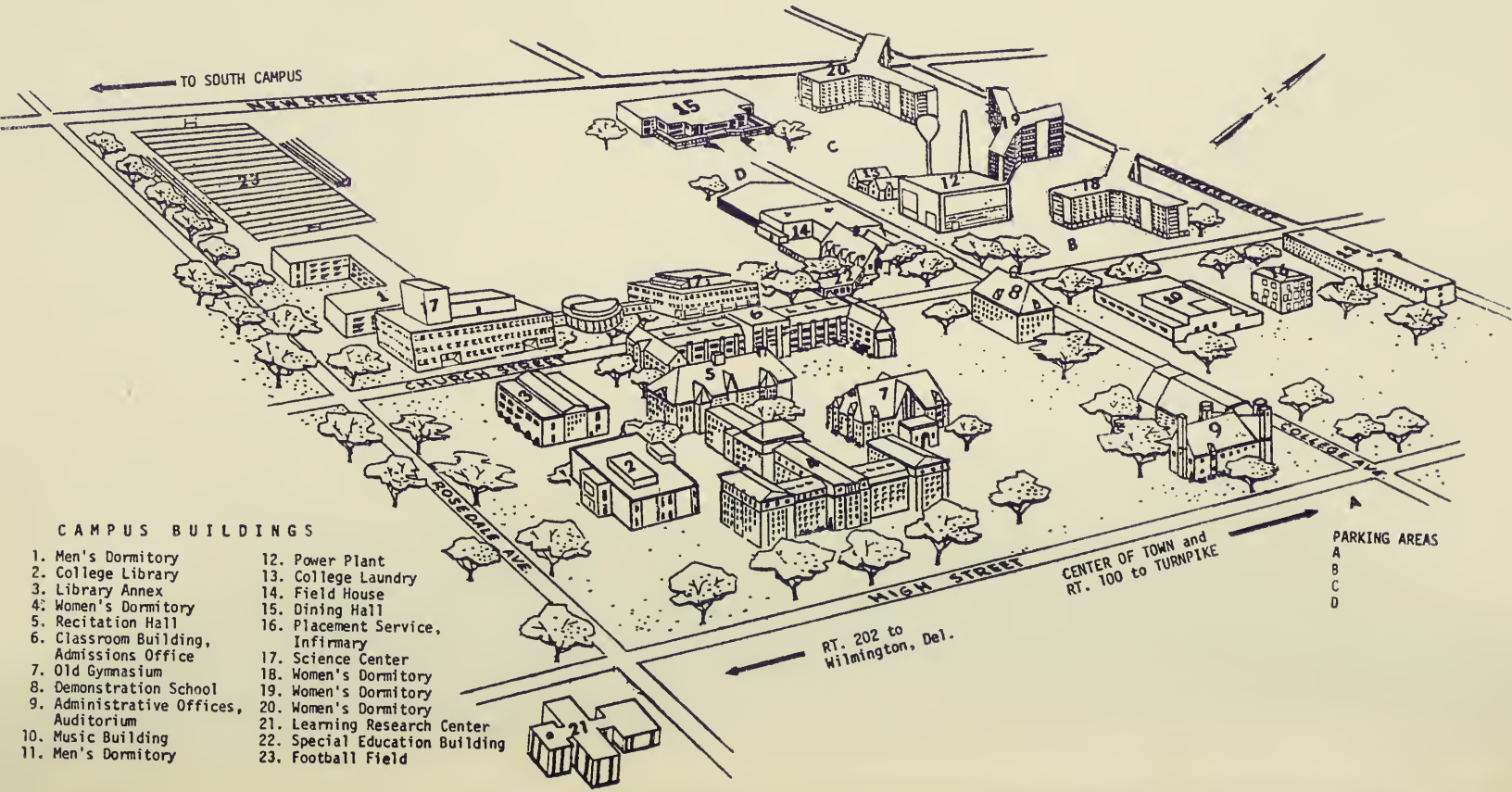
.....

Applicant interviewed by .....

Approved by ..... Dept. .....

FOR INFORMATION CALL —
WEST CHESTER 692 - 3210
EXTENSIONS 455, 456 and 457
Area Code 215

WEST CHESTER STATE COLLEGE CAMPUS



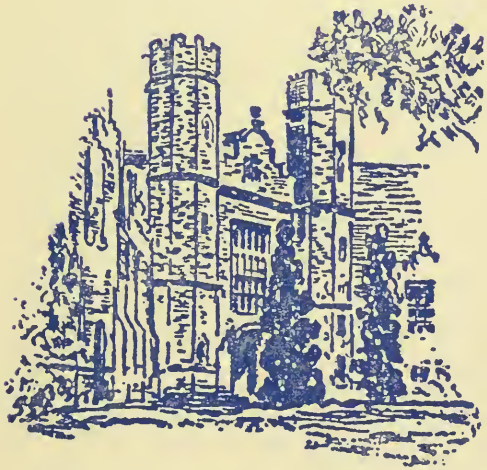
CAMPUS BUILDINGS

1. Men's Dormitory
2. College Library
3. Library Annex
4. Women's Dormitory
5. Recitation Hall
6. Classroom Building, Admissions Office
7. Old Gymnasium
8. Demonstration School
9. Administrative Offices, Auditorium
10. Music Building
11. Men's Dormitory
12. Power Plant
13. College Laundry
14. Field House
15. Dining Hall
16. Placement Service, Infirmary
17. Science Center
18. Women's Dormitory
19. Women's Dormitory
20. Women's Dormitory
21. Learning Research Center
22. Special Education Building
23. Football Field

WEST CHESTER STATE COLLEGE BULLETIN

WEST CHESTER, PENNSYLVANIA

GRADUATE STUDIES



CATALOGUE NUMBER
SUMMER SESSIONS
1966

WEST CHESTER STATE COLLEGE

IS ACCREDITED BY

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COLLEGES AND SECONDARY SCHOOLS,

THE NATIONAL COUNCIL FOR ACCREDITATION

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THE AMERICAN ASSOCIATION FOR HEALTH,

PHYSICAL EDUCATION, AND RECREATION,

AND THE

NATIONAL ASSOCIATION OF

SCHOOLS OF MUSIC

1966 SUMMER SESSIONS

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Mrs. Nolan N. Atkinson ..... Bryn Mawr
Joseph A. Joyce ..... West Chester
Mrs. Carmon Ross ..... Doylestown
Joseph Saltzman ..... Marcus Hook
Charles E. Swope ..... West Chester
Fred S. Wood ..... West Chester

GRADUATE COUNCIL

Earl F. Sykes, B.A., M.A., Ed.D.
(Ex Officio Member) President
Arnold Fletcher, B.S., Ed.M., Ed.D.
Dean of Academic Affairs
Willard J. Trezise, B.S., M.S., Ph.D.
Dean of Graduate Studies
F. William Leeds, A.B., M.S.
Assistant Dean of Academic Affairs

Department Chairmen:

Harold W. Benda, B.A., M.A., Ed.D.
Department of Education
Russell K. Rickert, B.S., M.S., Ed.D.
Department of Science
Albert E. Filano, B.S., M.S., Ph.D .
Department of Mathematics
Lloyd C. Mitchell, B. Mus., M.M., Ed.D.
Department of Music
Alfred D. Roberts, B.A., M.A., Ph.D.
Department of Foreign Languages
Russell L. Sturzebecker, B.S., M.Ed., Ed.D.
Department of Health and Physical Education

Division Coordinators:

Powell S. Thomas, B.A., A.M., Ph.D.
Department of English
John E. C. Dorchester, B.A., M.A., Ph.D.
Division of Biology
Edward G. Everett, B.S., M.A., Ph.D.
Department of Social Science
George L. Langdon, B.S., M.S., Ph.D.
Department of Geography
Edwin L. Youmans, B.A., M.A., Ph.D.
Department of Health & Physical Education

West Chester State College

West Chester State College is accredited by the Middle States Association of Colleges and Secondary Schools; the National Council for Accreditation of Teacher Education; the American Association for Health, Physical Education and Recreation; and the National Association of Schools of Music.

Modern and adequate science laboratories, instructional equipment, and classroom facilities are provided.

The annual All-Star Course brings to the campus some of the world's most famous artists in the fields of music, drama and dance. Among these have been the Pittsburgh, Detroit, National, Cleveland and Minneapolis Symphony Orchestras.

The William Pyle Philips Lecture Foundation brings to the campus lecturers who are leaders in the fields of literature, science and world affairs.

The college Assemblies, which are held approximately twice each month, provide the students, faculty and citizens of the community with an additional series of cultural and professional programs.

In addition to regular courses for preparing Elementary and Secondary teachers, West Chester has two special curricula preparing teachers in Music and Health and Physical Education. All of these courses lead to the Bachelor of Science degree in Education.

The College offers Liberal Arts and Sciences curricula in Humanities, Social Sciences, and Natural Sciences leading to a Bachelor of Arts degree.

The College maintains an active Placement Service without cost to graduates.

SUMMER SESSIONS

GENERAL STATEMENT

The twelve-week summer sessions are divided into three periods: the Pre Session of three weeks, the Regular Session of six weeks, and the Post Session of three weeks. The schedule includes courses for regular college students, and a number of special offerings for teachers in service.

West Chester State College is located in the beautiful residential town of West Chester, near the

historic Brandywine and Valley Forge. Students enjoy the added advantage of easy access to Philadelphia, New York, and Atlantic City.

The College provides for its wide area of service a modern, progressive, and constantly expanding co-educational program. The major aim of the program is the preparation of teachers particularly for the public schools of the Commonwealth of Pennsylvania. Students who have attended summer sessions at West Chester know it is an ideal place to combine serious study with wholesome recreation and student life.

SOCIAL AND RECREATIONAL PROGRAM

A summer at West Chester gives the student an opportunity to pursue college work under the most favorable conditions. The tree-shaded campus, with its conveniently located buildings, provides a beautiful and restful environment.

Opportunities for recreation are many: softball, tennis, swimming, and other activities. Social hours, when the students may talk informally with their professors, are a feature of the Pre and Post Sessions.

The borough and vicinity of West Chester are beautiful and at the same time provide material for study and research in history, science, and the arts. Philadelphia excels in scenic and historic interest, and special trips to the city will be arranged for those interested in taking advantage of the opportunities it offers.

Seeing the world-famous fountains at Longwood Gardens, picnicking and canoeing on the Brandywine, taking advantage of the best in music, art, and the theatre — these are some of the activities that make a summer at West Chester much to be desired.

GENERAL INFORMATION

CREDITS

Credits for the summer session may be earned at the rate of one semester hour per week of work; thus, a student attending all three sessions may earn 10 to 12 credits.

Students will not be permitted to carry more than six semester hours of work in the Regular Session unless permission to do so has been secured in advance from the Dean of Graduate Studies.

HOUSING

There will be adequate housing available for all men and women students for all three summer sessions. The College is unable, however, to provide housing for married students and their families.

After an application for admission to the Summer Sessions has been filed with the Graduate Admissions Office, room reservations should be made through a **written application** to either the Dean of Women's or Dean of Men's Office **one week prior to the opening** of each session.

Rooms may be occupied after 2:00 P.M. on the Sunday preceding each session.

COLLEGE REGULATIONS

The same college regulations pertaining to student procedure and conduct in effect during the academic year at West Chester State College are effective for the three summer sessions.

ENROLLMENT

Classes will be held in the courses offered subject to enrollment.

CLASS MEETINGS

Pre Session. After registration day, each class will meet as scheduled from 6:00 to 9:30 P.M. each evening Monday through Thursday for three weeks. It will not be possible for a student to carry more than one course during this time.

Regular Session. Classes begin on Tuesday and meet once daily (unless otherwise indicated) at the time stated in the schedule for a period of six weeks.

Post Session. After registration day, each class will meet twice daily, 8:00-9:30 A.M. and 10:30-12:00 Noon. The hour from 9:30-10:30 is for rest, library work or recreation. It will not be possible for a student to carry more than one course in this session. All courses meet for three weeks.

All three sessions will operate on Daylight Saving Time.

EXPENSES

The charge for tuition in the Graduate Program is $20.00 per semester hour of credit.

Graduate students desiring housing facilities at the college during the summer sessions may procure such facilities at the regular rates.

All fees are due and payable on the day of registration, after which the late fee of $5.00 is applicable.

Car registration $1.00.

Identification Card $1.00.

Graduate students are required to pay any fees (activity fee, library fines, etc.) required of other summer school students.

*FEES

Housing Fee for the Regular Session:

The housing fee for students is $102. This includes room and meals.

Student Activity Fee is $3.50.

Housing Fee for Pre and Post Sessions:

The housing fee for Pre and Post Sessions is $51.00 for each session. The fee includes room and meals.

The Student Activity Fee for Pre and Post Sessions is $1.75 for each session.

*MUSIC FEES

Students in the music curriculum are subject to the schedule of fees listed below.

INSTRUCTION

Piano, Organ, Instrument or Voice
½ hour private lesson ..... $55.00 per semester
Instrument class or Ensemble
2 hours per week ..... $35.00 per semester

RENTALS

Any Band or Orchestra
Instrument ..... $1.00 per week
(minimum charge — $3.00)

PRACTICE TIME

Piano Room
2 hours per day ..... $1.00 per week
(minimum charge — $3.00)
Organ Room
2 hours per day ..... $1.50 per week
(minimum charge — $4.50)
Instrumental Room
2 hours per day ..... $ .50 per week
(minimum charge — $1.50)

(NOTE: The music fees are in addition to the $20.00 per semester hour of credit fee.)

* These fees are subject to change without notice. All charges for a session must be paid on the day of registration.

REFUNDS

1. No portion of the tuition fee shall be refunded if the student has attended one-third or more of the class periods scheduled during a given session.
2. If a student withdraws from a course, for approved reasons, before one-third of the scheduled class periods have been completed, the student shall then be entitled to a refund of one-half of the tuition fees paid.
3. Refunds will not be made to students who are suspended or dismissed or to students who drop courses without the approval of the Dean of Graduate Studies.

NOTE: If a student withdraws completely from courses he is registered for **without attending any classes**, he will receive refund of all but $10.00.

If a student enrolls for two or more courses in the Regular Session and drops one (but not all his courses) and does not attend any classes of the course or courses from which he wishes to withdraw, he will receive a full refund.

MARKING SYSTEM

The marking system employed in the graduate program is the same as that of the undergraduate program.

A — Superior
B — Above average
C — Average
D — Passing
F — Failure
I — Incomplete

The following restrictions are enforced in the marking system: (1) the student must maintain a general average of at least 2.75; (2) grades lower than "C" are not acceptable in satisfying degree requirements; (3) courses which, for some valid reason (unavoidable absence during final examination, etc.), are not completed by the end of a given semester, must be completed before the close of the succeeding semester unless the Graduate Council grants an individual exception of this requirement.

RESIDENCE REQUIREMENTS

All courses given by the Division of Graduate Studies are taught on this campus by members of the Graduate Studies faculty. Therefore. students in this graduate program should not expect to take off-campus or extension courses.

This college will accept in transfer only courses taken in residence at other approved graduate schools or courses taught by regular members of the full-time faculty of other approved graduate schools at off-campus centers.

PLACEMENT SERVICE

Every year the College Placement Service is notified of many positions of all types on all levels of instruction. Because many of these positions offer unusual opportunities for professional advancement, graduate students are encouraged to use the services of the Placement Office.

All students pursuing graduate work at West Chester are eligible for the use of limited services provided by the Placement Service. Students who have completed less than 15 semester credits have access to the listings of vacancies. Students who hold undergraduate degrees from West Chester or who have completed 15 semester credits of graduate work are eligible for the full services of the Placement Service. The term "full services" includes registration, development of a complete set of credentials, and mailing of credentials to prospective employers.

There is no charge for the use of the Placement Service. Students wishing further information should visit the Placement Office. The office is open from 9-5 on weekdays.

OFFICE HOURS

The Graduate Office is located in room 109 on the first floor of Anderson Hall. Summer office hours are from 8:00-12:00 Noon and from 1:00-4:30 P.M. daily, Monday through Friday.

FOR INFORMATION CALL —

WEST CHESTER 692-3210

EXTENSION 455, 456, 457, 472

Area Code 215

REGISTRATION PROCEDURES

FOR GRADUATE STUDENTS

Pre Session

Saturday, June 4, 1966
(8:30-11:30 A.M.)

Regular Session

Monday, June 27, 1966
(A-L — 8:30-11:30 A.M.)
(M-Z — 1:30-3:30 P.M.)

Post Session

Monday, August 8, 1966
(8:30-11:30 A.M.)
(1:30-3:30 P.M.)

Registration for each summer session will be held in Swope Hall on the opening day of each session. To be valid all Pre-Registration forms must be signed by the student's adviser.

All Graduate Students **must** Pre-Register for courses to be taken during the Summer Sessions (Pre, Regular, and Post). Pre Registrations will end at 4:30 P.M. on the Wednesday prior to each Registration date. (Registration and payment dates are June 4 for Pre; June 27 for Regular; and August 8 for Post).

Graduate Students failing to comply with Pre-Registration will be subjected to a late Pre-Registration fee of $5.00. Other fees are: Change of Course Fee — $5.00; Late Payment Fee — $5.00.

ALL FEES ARE DUE AND PAYABLE ON THE GENERAL REGISTRATION AND PAYMENT DATE.

Graduate Admissions

All Graduate Students who have not been accepted in the Graduate Studies Program will report to the Dean of Graduate Studies to fill out application forms for admittance. These forms must be completed before a student can register. Two official copies of the undergraduate transcript must be on file for all new students taking graduate work before they can receive grades.

Station I Activity Fees

All graduate students must pay the Activity Fee in S-I prior to registering. Pre Session, $1.75; Regular Session, $3.50; Post Session. $1.75.

Station II Identification Card

Every graduate student who does not have an active West Chester State College Identification Card must obtain one in Room S-3. Photographs for the cards will be taken here, at a cost of $1.00. I.D. Cards are in effect for six years. Graduate students whose Cards are still in effect may omit this station.

Station III Graduate Registration for Courses

Students will report to Rooms S-5, S-6, S-7, S-8, and Brass 9 for Registration forms. These rooms are marked Health and Physical Education, Elementary Education, Secondary Education, and Music, respectively.

Students who have pre-registered will fill in the white and yellow cards. Students who have not pre-registered must fill in the blue, white, and yellow forms, providing the course desired is not closed. (Check with the department chairman and professor of the course.)

Station IV Choral Room

All graduate students will report to the Choral Room to secure "Permits to Attend Class." Those who have pre-registered will go to the table marked "Pre-registration." Those who have not pre-registered are to go to the table marked "Course Openings." Students who plan to graduate at the next commencement are to fill in the necessary forms available at this station.

Station V Choral Room

Graduate student check-out tables are located here. When students leave this room they should have their "Permit to Attend Class" cards.

Station VI Instrumental Room

All graduate students will pay credit fees here.

Station VII Automobile Registration

All graduate students with cars must register with the Security Police and secure stickers valid until September, 1966. Pre Session: 50¢. Regular Session: 50¢. Post Session 25¢.

GRADUATE PROGRAM

West Chester State College offers a graduate program leading to the degree of Master of Education. Degrees can be obtained in the following fields: Audio-Visual Education*, Biology, Chemistry*, Elementary Education, English, French, Geography, German, Guidance*, Health and Physical Education, Mathematics, Music, Physical Science, Physics*, Social Science, and Spanish.

The program is designed exclusively for persons engaged in classroom teaching. Each of the 16 fields in which the student can specialize places its emphasis, therefore, on developing the student's background for his actual teaching.

The basic requirements for the degree are: 30 semester credits, 18 of which must be in the student's area of specialization; the writing of a research report or thesis; and an acceptable overall average. The time limit for earning the degree is six years. Students may transfer a maximum of six semester credits from other accredited graduate schools.

Prospective students are advised to consult the 1966-1967 West Chester State College Graduate Bulletin for detailed information concerning such pertinent matters as prerequisites.

For this bulletin or for an application for admission to the summer or other sessions, write:

Dr. Willard J. Trezise
Dean of the Graduate Program
West Chester State College
West Chester, Pennsylvania 19380

IT SHOULD BE NOTED THAT ALL COURSES OFFERED IN THE GRADUATE PROGRAM. WHEN TAKEN AS PART OF AN APPROVED PROGRAM, MAY BE APPLIED TOWARD PERMANENT CERTIFICATION.

The College cannot guarantee that professors listed to teach courses will do so.

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* Depending upon Department of Public Instruction Approval.

PRE SESSION

June 6 - 24

Registration: Saturday, June 4, 1966

Classes begin Monday, June 6, 1966. Monday through Thursday for three weeks. 7:00-9:30 P.M. (2-credit courses)
7:00-10:30 P.M. (3-credit courses)

BIOLOGY

(3 credits)

Bio	542	Animal Ecology Mr. Bernhardt

EDUCATION

(All courses 2 credits unless otherwise stated)

Edu	519	The Kindergarten-Primary Program Miss Good
Edu	527	Audio-Visual Materials in the Elementary School Dr. McTavish
Edu	567	Creative Expression in the Elementary School Mr. Studenmund
Edu	529	Production of Non-Projected Materials (3 credits) Dr. Weagley
Edu	566	The Activity Program in the Secondary School Mr. Barth
Edu	590	School Law Dr. Micken
Gui	500	Principles and Techniques of Guidance Dr. Hill
Gui	567	Group Guidance Mr. Recktenwald
Psy	553	Seminar in Child Development and Behavior II: The Case Study Approach Mr. Rahn

ENGLISH

(2 credits)

Lit	521	English Literature to Chaucer Dr. Jordan
Eng	544	Problems of Speech Correction Mr. Suppan
Lit	539	Modern British and American Drama Mr. Bruehl

SOCIAL SCIENCE

(All courses are 2 credits unless otherwise stated)

His	523	Contemporary World Affairs Dr. Everett
Psc	532	International Relations (3 credits) Dr. Harding

MATHEMATICS

(2 credits)

Mat	521	Educational Statistics Mr. Weiss

FOREIGN LANGUAGE

(3 credits)

Fre	512	Explication de Texte Staff
Ger	514	Advanced Grammar and Composition Mr. Kulhanek
Spa	533	Generation of 1898 Mr. Lombardi

GEOGRAPHY

(3 credits)

Geo 520 Problems of Economic Geography
Mr. Hawthorne

Geo 540 The Geography of the U.S. and Its World Relations
Dr. Langdon

HEALTH AND PHYSICAL EDUCATION

(All courses are 3 credits unless otherwise stated)

HEd 504 Dance in Education (2 credits)
Miss Powlus

HEd 521 Administration and Supervision of Interschool and Intramural Athletics
Dr. Cottrell

HEd 550 Foundations and Principles of Health, Physical Education and Recreation
Dr. Sturzebecker

HEd 570 Curriculum Development in Health and Physical Education
Dr. Youmans

HEd 510 School and Community Recreation (2 credits)
Mr. Davis

MUSIC

(2 credits)

Mus 512 Music Education in the Secondary School
Mr. Pflieger

PHYSICAL SCIENCE

(3 credits)

PSc 590 History of the Physical Sciences
Staff

REGULAR SESSION

June 27 - August 5, 1966

Registration: Monday, June 27, 1966

A-L — 8:30-11:30 A.M., M-Z — 1:30-3:30 P.M.

Classes begin on Tuesday, June 28, 1966.

Classes will meet Monday through Friday at stipulated times.

Two-credit courses will meet one hour daily, and three-credit courses will meet one and a half hours daily.

REQUIRED COURSES — ALL CURRICULA

(2 credits)

Hum 500 Humanities
Prerequisite: Res 500
Section 1 8:00-9:00 A.M.
Dr. Mitchell and Dr. Slagle

Hum 500 Humanities
Prerequisite: Res 500
Section 2 11:00-12:00 Noon
Dr. Antonowich and Mr. McKenty

Edu 510 Educational Foundations
Section 1 8:00-9:00 A.M.
Dr. Bannon

Edu 510 Educational Foundations
Section 2 9:30-10:30 A.M.
Dr. Bannon

Res 500 Methods and Materials of Research 8:00-9:00 A.M.
Dr. Berry

Edu	510	Educational Foundations Section 3 Dr. Micken	10:00-11:00 A.M.

EUROPEAN TOUR (6 credits)

Ssc	550	Seminar in Contemporary European Culture (Student European Tour)	

SPECIAL EDUCATION WORKSHOP (6 credits)

SpE	540	Special Education Workshop Mr. Freeman	

BIOLOGY

(3 credits)

Bio	501	Introduction to Biochemistry for Teachers Lab to be arranged. Dr. Dorchester	8:00-9:30 A.M.
Bio	512	Plant Growth Lab to be arranged. Dr. Townsley	9:30-11:00 A.M.
Bio	595	Elementary Science Curriculum and Instruction Dr. McTavish	8:00-9:30 A.M.
Bio	525	Physiology for Teachers Dr. Trezise	11:00-12:30 P.M.

CHEMISTRY

(3 credits)

Che	523	Industrial Chemistry Processes Dr. Bravo	8:00-9:30 A.M.
Che	504	Modern Concepts in Chemistry Dr. Bravo	9:30-11:00 A.M.

EDUCATION

Two-Credit Courses:

Edu	500	Methods and Materials of Research (Elementary) Dr. Hill	8:00-9:00 A.M.
Edu	508	The Core Curriculum Staff	8:00-9:00 A.M.
Edu	515	Meeting the Individual Needs of Elementary School Children Mrs. Kulp	8:00-9:00 A.M.
Edu	517	Curriculum Problems in Elementary Education Mr. Studenmund	8:00-9:00 A.M.
Psy	554	Group Dynamics Dr. Gregg	8:00-9:00 A.M.
Psy	580	Ind. Psychometric Techniques: The Wechsler Scale Mr. Greenberg	8:00-9:00 A.M.
Edu	507	Social Studies Curriculum and Instruction (Elementary) Mr. Studenmund	9:30-10:30 A.M.
Edu	584	History, Philosophy and Psychology of A-V Education Dr. Benda	9:30-10:30 A.M.
Gui	564	Homeroom Guidance Dr. Hill	9:30-10:30 A.M.
Edu	521	Analysis, Diagnosis and Correction of Reading Difficulties Mr. Habecker, Miss Bourgeois	10:00-11:00 A.M.
Edu	582	Seminar in Research Communications Dr. McTavish	10:00-11:00 A.M.

Three-Credit Courses

Psy	551	Seminar in Child Development I (Aspects of Growth) Dr. King	9:30-11:00 A.M.
Edu	550	Advanced Educational Psychology Dr. Gregg	9:30-11:00 A.M.
Edu	530	Selection and Utilization of Instructional Materials (Open only to those who have not had the basic A-V Course.) Dr. Weagley	8:00-9:30 A.M.
Edu	501	Foundations of Reading Instruction Mr. Habecker	11:00-12:30 P.M.

ENGLISH
(2 credits)

Eng	502	History of the English Language Mr. Clokey	9:30-10:30 A.M.
Lit	512	American Literary Criticism Dr. Bailey	8:00-9:00 A.M.
Lit	537	Emerson and Thoreau Dr. Jordan	11:00-12:00 Noon
Lit	542	Spenser Dr. Jordan	9:30-10:30 A.M.

FOREIGN LANGUAGE
(3 credits)

Fre	530	French Classical Tragedy Staff	9:30-11:00 A.M.
Spa	511	Advanced Spanish Grammar Staff	9:30-11:00 A.M.
Ger	542	Modern German Novel Staff	11:00-12:30 P.M.

GEOGRAPHY
(3 credits)

Geo	505	Advanced Cartography Mr. Bielski	8:00-9:30 A.M.
Geo	529	Geographic Influences in World History Mr. Hawthorne	9:30-11:00 A.M.
Geo	545	Geography of Europe Excluding the U. S. S. R. Dr. Langdon	11:00-12:30 P.M.

HEALTH AND PHYSICAL EDUCATION
(All courses are 3 credits unless otherwise stated)

HEd	541	Community-School Health Education Workshop (First three weeks of Regular Session) Dr. Cottrell	8:30-3:00 P.M.
HEd	511	Field Problems in Recreation Mr. Davis	By Appointment
HEd	500	Methods and Materials of Research (2 credits) Dr. Youmans	8:00-9:00 A.M.
HEd	571	Comparative Physical Education, Contemporary Foreign Programs Dr. Sturzebecker	8:00-9:30 A.M.
HEd	591	Non-Thesis Seminar (2 credits) Dr. Youmans and Dr. Sturzebecker	9:30-10:30 A.M.

HEd	502	Elementary Physical Education Workshop (2 credits) Mr. Wilkinson	10:00-11:00 A.M.
HEd	532	Modified Physical Activities (2 credits) Mr. Norris	10:00-11:00 A.M.
HEd	561	Statistics in Health and Physical Education Mr. Lorback	9:30-11:00 A.M.
HEd	520	Advanced Coaching Mr. Lorback	11:00-12:30 P.M.
HEd	530	Scientific Bases of Physical Education Mr. Norris	11:00-12:30 P.M.

SOCIAL SCIENCE

(All courses are 3 credits unless otherwise stated)

His	524	Cultures of the Non-Western World Mr. Young	9:30-11:00 A.M.
Soc	531	Social Pathology Dr. Maneval	9:30-11:00 A.M.
His	511	Rise of the New Nation (2 credits) Mr. Shaffer	11:00-12:00 Noon
His	550B	Seminar in European History (2 credits) (Open to graduate majors who have had Ssc 500 and two courses from Group II, or the consent of the instructor) Dr. Schalck	11:00-12:00 Noon
Eco	532	History of Economic Thought Dr. Schooler	11:00-12:30 P.M.

MATHEMATICS

(All courses are 3 credits unless otherwise stated)

Mat	505	Theory of Sets Staff	8:00-9:30 A.M.
Mat	503	History of Mathematics Mr. Milliman	9:30-11:00 A.M.
Mat	551	Teaching of Secondary School Mathematics for the Low Achiever (2 credits) Mr. Weiss	11:00-12:00 Noon

PHYSICAL SCIENCE

(3 credits)

PSc	512	Mechanics for Teachers (Lab to be arranged) Mr. Hawkes	11:00-12:30 P.M.
PSc	561	Field Geology Dr. Greenberg	8:00-9:30 A.M.
PSc	513	Modern Physics for Teachers Staff	11:00-12:30 P.M.

MUSIC

(All courses are 2 credits unless otherwise stated)

8:00-9:00 A.M.			Rooms
Mus	500	Methods and Materials of Research Mr. Sprenkle	S-2
Mus	588	Research Seminar 1 credit (By appointment) Mr. Sprenkle	S-9
Mus	591	Music in the Romantic Era Dr. Johns	S-1

9:00-10:00 A.M.			Rooms
Mus	509	Piano Literature Mrs. Gottlieb	SS
Mus	560	Study and Appreciation of the Opera Open to all graduate students. Mr. Middleton	S-3
Mus	582	Form in Music Dr. Wright	S-8
Mus	590	Study and Appreciation of the Symphony Open to all graduate students. Dr. Johns	S-6
10:00-11:00 A.M.			
Mus	506	Instrumental Literature Mr. Carson	S-11
Mus	510	Current Trends in Music Education Dr. Antonowich	S-6
Mus	528	Twentieth Century Music Styles Dr. Wilkinson	S-5
Mus	586	Vocal Diction Dr. Cheesman	S-3
11:00-12:00 Noon			
Mus	508	Choral Literature Mr. Sweet	SC
Mus	516	Piano Pedagogy Mr. Carl	S-3
Mus	566-69	Ensemble and/or Orchestra (1 credit) Dr. Johns	SS
12:30-1:30 P.M.			
Mus	538	Opera Workshop Mr. Sweet	SC
1:30-2:30 P.M.			
Mus	504	Advanced Instrumental Conducting Mr. Middleton	S-3
Mus	536-9	Vocal Ensemble and/or Chorus (1 credit) Mr. Sweet	SC
Mus	566-9	Ensemble and/or Band (1 credit) Mr. Carson	SS

By Appointment only:

Mus	531-5	Advanced Voice (1-2 credits) Voice Staff
Mus	541-551	Advanced Piano, Individual Lessons (1-2 credits) Piano Staff
Mus	561-6	Advanced Instruments, Individual Lessons (1-2 credits) Instrumental Staff
Mus	610-3	Thesis (1-3 credits) Music Staff

POST SESSION

August 8 - 26, 1966

Registration: Monday, August 8, 1966

Classes begin Tuesday, August 9, 1966.

Classes meet Monday through Friday as scheduled.

Three-credit courses will meet from 8:00-9:30 A.M. and from 10:30-12 Noon for three weeks.

Two-credit courses will meet from 8:00-9:00 A.M. and from 10:00-11:00 A.M. for three weeks.

REQUIRED COURSE — ALL CURRICULA

(2 credits)

Hum 500 Humanities
Prerequisite: Res 500
Dr. Mitchell and Mr. McKenty

BIOLOGY

(3 credits)

Bio 523 Resource Materials in Elementary Science
Dr. McTavish

Bio 591 History of Biology
Mr. Skillen

Bio 543 Freshwater Biology
Mr. McDonnell

EDUCATION

(All courses are 2 credits unless otherwise stated)

Edu 505 Curriculum and Research in the Language Arts
Mrs. Kulp

Edu 523 Supervision in the Elementary School
Staff

Edu 565 Improving Instruction through Efficient Classroom Management
Mrs. Haas

Gui 500 Principles and Techniques of Guidance
Staff

Gui 540 Evaluative Methods in Guidance I
Mr. Recktenwald

Edu 528 Production of Projected Still Materials (3 credits)
Dr. Weagley

Edu 533 Television in Education (3 credits)
Mr. Strayer

ENGLISH

(2 credits)

Lit 527 Stuart Literature to Commonwealth
Dr. Jordan

Lit 514 American Literary Movements
Dr. Berry

Lit 550 Literature in the Elementary School
Mrs. Smith

GEOGRAPHY

(3 credits)

Geo 502 Regional Physiography
Dr. Keinard

Geo 523 Advanced Conservation of Natural Resources Workshop
Staff

Geo 586III Area Field Studies (Puerto Rico)
Advance reservation necessary
Write to Department of Geography,
Dr. Langdon.

SOCIAL SCIENCE

(3 credits)

His 515 American Constitutional Development
Dr. Drayer

MATHEMATICS

(2 credits)

Mat 501 Fundamental Concepts of Mathematics for the Elementary School Teacher
Staff

HEALTH AND PHYSICAL EDUCATION

(3 credits)

HEd 562 Administrative and Supervisory Practices in Health, Physical Education and Recreation
Dr. Sturzebecker

HEd 580 Contemporary Practices in Safety Education
Dr. Cottrell

FOREIGN LANGUAGE

Lan 504 The Language Laboratory (3 credits)
Mr. Lombardi

PHYSICAL SCIENCE

PSc 520 Mineralogy for Teachers (3 credits)
Dr. Greenberg

PSc 532 Space Science (3 credits)
Dr. Rickert

MUSIC

(2 credits)

Mus 519 Music Appreciation in the General Music Program
Dr. Antonowich

Mus 585 String Literature and Pedagogy
Dr. Johns

NATIONAL SCIENCE FOUNDATION SUMMER INSTITUTE IN MATHEMATICS

Foundations of Algebra for Junior High School Teachers

Foundations of Geometry for Junior High School Teachers

Seminar in Teaching of Junior High School Mathematics

Admission to this program is limited to those granted National Science Foundation stipends. For further information contact Dr. Albert E. Filano, Chairman, Mathematics Department. The deadline for submission of applications is February 15, 1966.

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